Does corporate governance impact on the sustainable return of IPOs? A comparative analysis of China and New Zealand IPOs listed between 1999 and 2004

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ABSTRACT

This thesis examines the impact of corporate governance practices on the short and longer-term sustainable returns of initial public offerings (IPOs) in China and New Zealand. In particular, the analysis focuses on the Shanghai, Shenzhen and New Zealand exchanges, providing a comparison between them. The closer trade and economic relations between China and New Zealand and the increasing immigration to New Zealand of relatively well-off Chinese makes the study topical. Different political and cultural settings may give rise to differing relationships between IPO success and governance in these three markets and this will promote some interesting implications.

Corporate governance involves regulatory and market mechanisms, and the roles and relationships between a company's management, its board, its shareholders and other stakeholders. IPOs are very important for investors, stock markets and economic growth. The relationship between corporate governance mechanisms and IPO performance has received attention in studied by the literature. The bulk of prior research focuses on larger and more developed economies. There is an increasing volume of literature relating to Chinese IPOs but none have focused on this key issue of IPO performance and the corporate governance structures of the particular companies. New Zealand by comparison to China is a small economy, small population and has few IPOs. However, China has become New Zealand's second largest trading partner since 2008 and China became one of the major sources of immigrants to New Zealand from late 1990s.

This thesis makes an important contribution to knowledge demonstrating that the short-term IPO performance is associated with different corporate governance attributes to those apparent for long-term performance of IPOs. The use of a wide range of governance variables

for the analysis as compared with prior studies provides greater confidence in the findings. The longer time period, up to 11 years, used in this study is helpful in reviewing the longer-term sustainable IPO performance. China is the fastest growth economy in the world with rapidly developing stock markets. New Zealand, on the other hand, is a mature economy with a small stock market. The quality of data and analysis for two such very different economics provides an opportunity for careful diagnostic and specification testing. In this study a more robust empirical analysis, extending the commonly used OLS approach, through several panel data methods of generalised least square, and generalised method of moment models are explored.

The study uses data from Shanghai, Shenzhen and New Zealand stock exchanges, covering the IPOs listed from 1999 to 2004. Those data are secondary data collected from the websites of the three stock exchanges, NZX Deep Archive, CSMAR database and individual companies' annual reports. The study includes an extensive range of governance variables, including board size, board demographics, board leadership, board education, and board evaluation variables. There are three long-term dependent variables and three short-term dependent variables. There are a group of control variables. Various tests and suitable regression models are used to find that relationship between corporate governance mechanisms and the short- and long-term performance of IPOs on three exchanges. Several diagnostic tests including serial correlation test, over-identification test, and joint significance test are also used to check the validity of the regressions.

The thesis finds that the panel data and cross sectional regressions explain the long and short-term IPO performance well on the Shanghai Stock Exchange. The results indicate that the panel data regressions explain the long-term IPO performance well, but the cross sectional

regressions do not have acceptable explanatory power for the short-term IPO performance on the Shenzhen Stock Exchange. In New Zealand the panel data regressions explain the long-term IPO performance well, but the cross sectional regressions do not contribute a useful explanation for the short-term IPO performance.

This thesis contributes a number of important implications. The commonality of corporate governance variables associated with successful performance has implications for companies preparing to list, exchanges arresting companies with listing, investors looking for successful listings and policy makers wanting an efficient capital market. The difference in variables similarly provides insight for companies, exchanges, investors, and policy analysts.

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CHAPTER 1 INTRODUCTION

1.1 Background to the Study

This research examines the impact of corporate governance practices on the short and longer-term sustainable returns of initial public offerings (IPOs) in China and New Zealand. Corporate governance mechanisms and IPO performance have been widely studied by researchers are tested in both developed and developing markets. This thesis makes an important contribution to knowledge demonstrating that the short-term IPO performance is associated with different corporate governance attributes than long-term performance. This is important when the IPO stage in a company's life is viewed as a transformation process.

Corporate governance involves regulatory and market mechanisms, and the roles and relationships between a company's management, its board, its shareholders and other stakeholders. IPOs are very important for investors, stock markets and economic growth. It is the way by which firms raise capital from the public, and by which investors may place resources with new ventures promoting, potentially, growth and long-term sustainable returns. Table 1.1 indicates the listing of IPOs from 1999 to 2004 on the Shanghai, Shenzhen, and New Zealand Stock Exchanges. It is apparent the number of IPOs has increased over the period but there is variation from year-to-year. The success of an IPO is not only important for the survival of the company, it is also important for the longer-term contribution it can make to the economy through growth of employment.

Table 1.1 Number of new listing IPOs over 1999 to 2004[1]

	1999	2000	2001	2002	2003	2004
Shanghai	46	88	75	70	67	61
New Zealand	6	23	10	12	18	36
Shenzhen	50	51	0	0	0	31

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[1] The numbers are referring to Shanghai, Shenzhen, and New Zealand Stock Exchange Annual Statistics.

In 1997, the Asian economic crisis impacted adversely on the stock markets in East Asia and Australasia. Accordingly, the choice of sample period starts post this crash with its consequential regulatory reforms. The period encapsulates a period of high growth in China with liberalisation of investment rules providing a good sample of IPOs to consider. Other markets included in the sample experience growth to varying degrees. It is important that an adequate number of companies are available and appropriate records are accessible. Prior to 1999 data is problematic.

The countries selected for the study reflect differing degrees of market maturity, political, legal and cultural bases. Prior research has emphasised the difference between emerging and developed markets, scale, culture, legal framework and political systems and the impact they have upon the performance of listed stocks. IPOs as a subset have not received comprehensive attention in these regards. The literature suggests that corporate governance mechanisms have an impact on IPO performance in developed and developing countries at different levels. Most studies have focused on large and developed economies, viz United States, United Kingdom, other European nations, Australia, and Japan. There are far fewer studies focused on smaller developed economics, viz New Zealand, Singapore, or even Hong Kong. The New Zealand economy is increasingly becoming more integrated with Asian economies, but culture, lifestyle, politics and legal systems are very different in East and North Asian countries. The tests of how corporate governance impacts on the IPOs' returns in culturally different countries will enable a valuable comparison.

There is also a substantial literature relating to large, developing economies, like China, India, Russia, and Brazil; China is now the second largest economy in the world, after the United States. Researchers have investigated many issues relating to the Chinese stock exchange, but

the material relating to corporate governance and IPOs is small. IPOs are very important for investors, stock markets and economic growth in most of nations, and there are some differences in China. IPOs are the way firms raise capital from the public but they may not be correlated with the economic growth China. From 1999 to 2011, on average the Chinese economy achieved 10% growth increase per year and during the period stock market indices stayed at the almost same level.

The research is based on IPOs listing on the Shanghai Stock Exchange (SHSE), Shenzhen Stock Exchange (SZSE), and New Zealand Stock Exchange (NZSE) from 1 January 1999 to 31 December 2009 and includes both surviving and delisted companies. A cut–off date of 31 December 2004 IPO listings permits five years of post-listing data to be used in calculating returns through to 2009. This provides adequate time to consider longer-term patterns.

The empirical focus of the research is to use corporate governance factors as independent variables and IPO performance as the dependent variables. Several metrics will be investigated as measure of IPO performance. The data collected will be presented as panel data and analysed using regressions based methods.

According to Bradley, Jordan and Ritter (2003), the five day abnormal return, i.e., return above the market average of US IPOs is 4.1%, but they did not indicate the longer-term IPO performance. Examination of both the long and short-term is required to test IPO performance. The significance of this research lies in increasing an understanding of what factors drive the return risk relationship in an IPO, promoting its sustainable future. Corporate equity flotation for new companies is significant in terms of the sums of money

involved, although this has not been the case in New Zealand.[2] A clear understanding of the attributes of success is important for international investment and may assist in formulating local policies to promote sustainable corporate listings in New Zealand.

Table 1.2 Percentage Change of Market Capitalisation in Chinese Stock Markets over 2000-2008

	2000	2001	2002	2003	2004	2005	2006	2007	2008
SHSE	85%	2%	-8%	18%	-13%	-11%	210%	277%	-64%
SZSE	78%	-25%	-19%	-2%	-13%	-15%	91%	222%	-58%

Table 1.2 presents the growth of market capitalisation in China from 1999 to 2008. The Chinese stock market is a developing and fast growing market which differs from other markets around whole world. After the economic reforms of the 1980s many Chinese companies were privatised. The purpose of the privatisation was to improve the performance of the companies, but state-owned enterprises (SOEs) continued to play an important role in most listed companies through significant block holdings. This is a distinctive difference between Chinese companies and those in other countries. According to Cheung, Jiang, Limpaphayom, and Lu (2008), one of the unique features of the Chinese stock market is that approximately two-thirds of China's listed companies are controlled by SOEs. The primary goal of these companies is to achieve policy goals rather than maximise shareholders' wealth; their goals may conflict with the interests of minority (outside) shareholders. Multiple issues concerning the "agency theory" impacts through governance attributes raise concerns about the sustainable return of such IPOs.

1.2 The Chinese and New Zealand Stock Exchanges

The SHSE is one of the two stock exchanges in mainland China, which is located in Shanghai Pudong. The SHSE was officially opened on 19th December 1990. The SHSE is a non-profit organization and under the direct management of the China Securities Regulatory Commission. Its main functions include providing a place for securities trading, formulating

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[2] Refer to Table 1.2.

the operational rules of the stock exchange, supervising the IPO listing arrangement and applications, organizing and monitoring the securities trading, regulating listed companies and investors, managing and disclosing the market information. The SHSE is the member of the International Organization of Securities, the Asia and Oceania Exchange Association, the World Federation of Exchange. Until the end of 2009, the SHSE had 870 listed companies, 1351 securities, and the total market value was more than 18 trillion yuans. Overall, the SHSE was a very fast growing security market during the decade 1999-2010.

The SZSE was officially founded on 1st December, 1990. It formally opened for business on 3rd July, 1991. After 1st April, 1993, the SZSE was managed by the Shenzhen Securities Management Committee. The SZSE provides a centralised trading place for securities. It also organises and supervises those securities trading under the direct supervision and management of the China Securities Regulatory Commission. The main functions of the exchange include developing the trading rules, arranging IPO listings, supervising IPO listings, organising and monitoring securities trading, supervising the investors and listed companies, administering and disclosing market information, and any other functions licensed by China Securities Regulatory Commission. Supported by the development of the SHSE, the SZSE stopped issuing new shares in 2000. The small and medium sized enterprises (SME) board was established by the SZSE on 17th May, 2004, and eight companies were post listed on the SME board on 25th June, 2004. After 2004 SZSE beginnings restored new IPOs, but only on SME board.

In 1915 the 5 stock exchanges of Dunedin, Otago, Auckland, Wellington and Thames established the Stock Association of New Zealand. The national New Zealand Stock Exchange was established in 1983. NZSE became a member of the World Federation of

Exchanges in 1984. In 1987, the NZSE share prices reached the highest point in its history with 309 companies listed on the exchange at that time. In 1991 the exchange introduced NZSE40 and NZSE30 indices as the measurements of market performance. In 2003, the NZSE IPO was listed on its own exchange with a trading code "NZX". In the NZX, the major investors are individuals. They hold about 50% of stocks. Compared with the Chinese stock exchanges, the NZSE capital gains are relatively small, but the dividend payments are relatively higher. The NZSE included four major markets: NZX Main Board (NZSX), NZX Alternative Market (NZAX), NZX Debt Market (NZDX) and NZX Derivatives (NZCX).

1.3 Objective and Research Questions

The aim of this research is to examine the impact of corporate governance practices on the short and longer-term sustainable returns of IPOs in China and New Zealand. The focus of the investigation is not premium paid on listing, but rather the sustained returns post-listing. The study uses data from Shanghai, Shenzhen, and New Zealand stock exchanges, covering the IPOs listed from 1999 to 2004. The study included all possible governance compositions, viz board size, board demographics, board leadership, board education, and board evaluation variables. There are three long-term sustainable dependent variables, viz yearly abnormal return, long-term Tobin's Q, and long-term ROA. There are also three short-term dependent variables, viz first day abnormal return, short-term Tobin's Q and short term ROA. There are a group of control variables between independent and dependent variables, viz size, beta, labour, market factors, industries, and years of listings. SHSE is a much larger exchange than SZSE and NZSE in terms of market capitalisation, number of listings, and number of investors. Differences between the exchanges are expected to enhance our understanding. The study considered five basic potential research questions.

1. Is long-term sustainable IPO performance related to corporate governance mechanisms in SHSE, SZSE, and NZSE?

2. Is short-term IPO performance related to corporate governance mechanisms in SHSE, SZSE, and NZSE?

3. Is Chinese IPO performance related to different governance mechanisms, because of the size and participants difference of stock exchanges?

4. Are Chinese and New Zealand IPO performance related to different governance mechanisms, because of the different institutional systems (viz board structure difference, CEO and chairman age and qualification, SOE ownership) and exchange regulations difference of countries?

5. Are SZSE and NZSE IPO performance related to similar governance mechanisms, because of the similar size?

1.4 The Significance of the Study

The goal of this research is to examine whether corporate governance influences the performance of IPOs over time and across a number of selected countries. Corporate governance has been widely tested using various characteristics as independent and control variables in regression models. The short-term performance of IPOs has been investigated using these approaches. Long-term performance of IPOs has not been comprehensively studied using these corporate governance variables. Prior research informs the research design and method for this study. First, analysis of IPO performance has used multiple metrics in measuring IPO performance, such as abnormal yearly return, Tobin's Q (Tobin, 1969), return on assets (ROA), and abnormal first day return. Second, the link between corporate governance and performance is a developing area of study. Third, the link between corporate governance and IPO performance is an emerging area of research with the focus on the short-term rather than sustainable longer-term returns. This research will fill the gap in the literature.

Prior research has focused on the returns of IPOs on listing, the longer-term returns of IPOs and, recently, on the impact of attributes of companies' boards of directors on listing performance. However, the impact of corporate governance upon the longer-term performance, and the pattern of returns as the companies move forward from new listing, remain unclear and warrant investigation.

The study makes several contributions to the current literature. Linking corporate governance theory to empirical variables is important. Many prior studies, pursuing a positivist track have neglected the theory literature. The links are explicitly explored in section 2.3.

Through the use of a wide range of governance variables, the analysis is broader than prior work and provides greater confidence in the findings. The study adds to the understanding of how different forms of governance impact the short and long-term IPO performance. Secondly, most prior studies test either short-term or long-term IPO performance over a specific period. The current study tests the yearly long-term sustainable IPO performance, for periods up to 11. Thirdly, earlier works have focused on large and developed economies, viz United State, United Kingdom, other European nations, Australia, and Japan. This study provides evidence from China, which is the fastest growth economy with developing stock markets. New Zealand is a mature economy with a small stock market. Fourthly, most previous literature tests the impaction of corporate governance on IPO and firm performance in one market, but this study offers a comparison between two Chinese stock markets, and even comparisons between two countries. Fifth, the merits of the Chinese supervisory board system are reflected in differing views in prior studies. This thesis concludes that the supervisory board is significantly positively related to the long-term IPO performance for SHSE and SZSE. Finally, this study uses a more robust empirical analysis, extending the

commonly used OLS approach, with careful diagnostic testing and then applying a more appropriate model as appropriate.

1.5 The Structure of the Study

The remainder of the study is included as following chapters. Chapter 2 provides a review of the corporate governance and IPO performance literature relevant to the current study. The chapter provides the major findings of the corporate governance and IPO performance studies, relating to both the short and longer-term.

Chapter 3 covers two hundred years of Chinese stock market history starting with the late Qing Dynasty, and also provided the brief information about different classes of Chinese shares. The chapter also introduces the establishment and growth of Shanghai, Hong Kong and Shenzhen stock markets.

Chapter 4 covers the background and the development of the New Zealand Stock Exchange.

Chapter 5 introduces the methodologies and research methods of the study. The chapter includes the initial research questions, hypotheses, models, potential independent and control variables, statistical tests, and suitable regression formulations. First, it provides the research framework and the conceptual framework of the study. Second, it describes the hypotheses of the study. Third, it introduces the potential dependent, independent and control variables to be tested in the later stages. Finally, it provides the statistical test and suitable regressions of the study.

Chapter 6 discusses information on the data used in this study.

Chapter 7 presents the descriptive, econometric tests and the empirical results and findings in relation to corporate governance mechanisms and the short and long-term performance of IPOs on the Shanghai Stock Exchange. Chapter 8 covers the same material as Chapter 7 in respect of the Shenzhen. Chapter 9 covers the New Zealand exchange in a similar manner to chapter 7 and 8.

Chapter 10 presents the comparison study of SHSE, SZSE, and NZSE's corporate governance and short- and long-term IPO performance.

Chapter 11 summarises the findings and their implications.

1.6 Conclusion

Corporate governance mechanisms and IPO performance have been widely studied by researchers. The literature suggests that corporate governance mechanisms have an impact on IPO performance in developed and developing countries at different levels. Most studies have focused on large and developed economies, viz United States, United Kingdom, other European nations, Australia, and Japan. This research examines the impact of corporate governance practices on the short and longer-term sustainable returns of IPOs in China and New Zealand. The research is based on IPOs listing on the SHSE, SZSE, and NZSE from 1 January 1999 to 31 December 2009 and includes both surviving and delisted companies.

CHAPTER 2 LITERATURE REVIEW

2.1 Introduction

This research examines whether corporate governance influences the performance of IPOs over time and across a number of selected countries. The influence of corporate governance has been widely tested using various characteristics as independent and control variables in regression models. The short-term performance of IPOs has been investigated using these approaches, but long-term performance of IPOs has not been comprehensively studied using these corporate governance variables. This research will fill the gap in the literature.

Prior research informs the research design and method for this study. First, the performance of IPOs has been measured using multiple metrics, such as Tobin's Q (Tobin, 1969), cumulative abnormal return (CAR), buy and hold abnormal return (BHAR), ROA, and first day return in discount. Second, the link between corporate governance and performance is a developing area of study. Third, the link between corporate governance in IPO performance is an emerging area of research with the focus on the short-term rather than sustainable longer-term returns.

In the literature there are three key themes: corporate governance and IPO performance, theories of corporate governance, and studies of supervisory boards in Chinese markets. Within the corporate governance and IPO performance theme, there are papers analysing IPO performance, corporate governance, and also IPO performance in corporate governance areas. In IPO performance and corporate governance studies researchers have considered IPO performance which involved long-run and short-run analyses in developed and developing markets. Studies have also investigated corporate governance analysing CEO characteristics, board characteristics, ownership characteristics, audit characteristics, and accounting

characteristics components. Corporate governance researchers have used a range of theoretical approaches including agency theory, stewardship theory, tournament theory, institutional theory, stakeholder theory, managerial hegemony theory, and resource dependent theory. Most supervisory board studies have been undertaken by domestic Chinese researchers. The following columns show the structure of the literature review and the areas where prior studies have focused.

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In the sections which follow the key issues are noted and a precis of several leading papers provided. This approach followed is to identify the location of the study, the sample size and

other components as they impact the generalizability of the findings. This is important for the current study given the market size, time periods and maturity of the economies involved.

2.2 IPO Performance

An IPO is the issue of shares by a company to the public for the first time and is typically an important component of its capital raising. When a company has a listing price for its shares greater than the issue price, then this is known as a premium on listing. Premiums on listing of an IPO may be considered a signal of likely future success. Some investors speculate on making gains on listing and they are referred to as stags. The capacity of the company to generate sustainable returns over the medium term, say five years, may not translate into reality even given a good bonus to the stags.

IPO performance has been widely tested by researchers in developed and developing markets. Normally, these studies select several IPOs in a country through a chosen time period and then analyse the short- or long-term performance. Prior research has focused on the returns of IPOs on listing, and the longer-term returns of IPOs. Therefore, these independent variables may also significant for the current study as indicators in the Chinese and New Zealand markets. The markets, sample sizes, time periods, variables, and major findings are discussed in the later stage of developed and developing markets' sections.

2.2.1 IPO Performance in Developed Markets

Long-term performance of IPOs has been tested by researchers in developed markets. McConaughy, Dhatt and Kim (1995) compare some of the economic and accounting ratios in the US from 1985 to 1992, and find a significant improvement in operating efficiency five to six years after the IPO. They indicate that agency costs do not increase through time; the

markets discipline entrepreneurs with incentives to maintain pre IPO performance. Poor stock performance is attributed to investors overpaying.

Florin (2005) examines whether venture capital (VC) affects IPO performance and founder returns in the two years post-listing. The sample of 277 IPOs in the US begins in 1996. The independent variables include founder, top management (TMT), pre IPO venture, and industry characteristics, viz venture capital equity, number of founders, startup experience, TMT experience, TMT education, firm age, pre IPO income, pre IPO sales, hotness of IPO, IPO proceeds, assets at IPO, income at two years after IPO, sales growth, assets growth, ROA, return in sales (ROS), share growth, founder wealth, and CEO at two years after IPO. Florin indicates that venture characteristics pre IPO and venture performance post IPO are not significantly different when comparing performance with and without VC backing.

Westerman, Geiger and Cyr (2008) examine the effects of VC involvement on long-term IPO performance. They select 402 IPOs from year 1993 in the US with 242 of non-VC backed firms and 160 VC backed. One of their hypotheses is that VC is more interested in the long-term stock price performance. They choose a dummy for VC backing, and combine with firm risk, company age, the number of employees, IPO offering price, net income over share, and CEO ownership as the independent variables. They suggest VC backing and incentive stock options have a positive effect on the three years performance following the IPO.

The long-term IPO performance of German and Spanish family-owned firms is investigated by Jaskiewicz, Gonzalez, Menendez and Schiereck (2005). Their sample consists of 153 German and 43 Spanish firms which had been listed during the period 1990 to 2001. They choose 36 months BHAR as the measure of long-term performance. They use a dummy for

listing year, market value, percentage of family ownership, firm age, firm size, and a dummy for country as the control variables. They indicate firm age has a negative influence on long-term IPO performance in Germany and Spain. They also indicate that firm size has a positive influence on the long-term performance of IPOs and strong family involvement has a positive impact on long-term stock market performance.

Goergen, Khurshed and Mudambi (2007) examine the relationship between three-year post IPO performance and pre IPO financial performance for firms. Their sample consists of 134 post-listed IPOs on the London Stock Exchange from 1991 to 1995. They subdivide the sample into two groups based on size, viz small firms and large firms, to investigate the 36 month BHAR. They indicate the proxy for the quality of managerial decisions and degree of multi-nationality have a positive effect on the long-term stock return. Pre IPO accounting performance and agency cost have a negative effect on the long-term stock return.

Dong, Michel and Pandes (2011) examine the relationship between underwriter quality and long-term IPO performance in Canada. They employ the number of managing underwriters, underwriter reputation, and absolute price adjustment to indicate the underwriter quality. The sample includes 7,407 IPOs listed in Toronto Stock Exchange from 1980 to 2006.They find that higher underwriter quality predicts the better long-term IPO performance.

Levis (2011) examines three years aftermarket performance of private IPOs in United Kingdom. He selects 1,595 IPOs listed in London Stock Exchange from 1992 to 2005. He finds that private IPOs achieved better operating and market performance when compared to other IPOs in the three years following the public listing.

Thomadakis, Nounis and Gounopoulos (2012) investigate the long-term performance of 254 Greek IPOs were listed from 1994 to 2002 by cross-sectional dataset. They use three year BHAR and CAR as the measurements of long-term IPO performance. They find that IPOs are outperformed in the first and second years, but underperformed in the third year.

A combined testing of short and long-term performance of IPOs has been undertaken in developed markets. Ljungqvist (1997) selects 189 German IPO firms from 1970 to 1993 using initial return as the short-term IPO performance and BHAR as the long-term metric for IPO performance. Several control variables, viz the inverse of real gross proceeds, fraction of share capital retained by insiders after IPO, firm market movement before and after IPO, and a dummy for year are used in a regression model. He indicates short-term underpricing is positively related with the stock market, macroeconomic conditions, insider retention rates, and the inverse of real gross proceeds. The long-term performance of German IPOs is poor.

The competitive posture of 168 high technology firms that completed an IPO in 1992 and their short- and long-term performance are analysed by Wilbon (2003). He uses Tobin's Q as the IPOs' performance measure. He indicates that having a more pioneering posture matters with regards to short-term IPO performance using Tobin's Q measure in high technology firms, and he does not find a relationship between competitive posture and long-term IPO performance. He has also indicates the research uses a large sample size which exceeds other studies and thus provides more robustness to the statistical analysis.

Guo, Lev and Shi (2006) use research and development (R&D) to explain short and long-term IPO anomalies in the US. Their sample consists of 2,696 US IPOs listed between 1980 and 1995. They use first day IPO return as a measure of short-term return and then examine

long-term performance via time-series regression. They use natural log of issue proceeds, revision in offer price, underwriter reputation measure, pre-offer demand, percentage of insider ownership, and VC backing as the independent variables. They indicate R&D intensity is positively associated with short- and long-term IPO performance.

A further US-based study covering 1990-1998 by Johnston and Madura (2006) selects 58 stockholder owned thrifts, including 20 mutual holding companies (MHC). They examine dependent variables of initial returns and long-run returns in the regressions through several control variables, viz underwriter, size, market run up, interest rate environment, and time periods. They indicate that MHCs experience lower initial returns; their long-term performance is not statistically different from the subsample of stockholder owned thrifts.

Stevenson (2006) examines the short- and long-term performance of UK privatisation, including public utilities with conventional IPO, with a sample of 757 IPOs in the UK market between 1981 and 1998. He uses first day abnormal return, seven day abnormal return, and 30 days abnormal return to indicate the short-term IPO performance; 3 years CAR, 5 years CAR, 3 years BHAR, and 5 years BHAR as the long-term IPO performance. The performance of privatisations significantly outperforms that of listed companies over the short term. The long-term performance of privatisations, especially the utility firms, provides a higher return than other firms.

Carow, Cox and Roden (2007) use a sample of 347 demutualising thrifts from 1991 to 2004 in the US and examine whether inside participation influences IPO performance. Their dependent variables include inside participation, percentage of first day price change, the log of proceeds, price to book ratio, book value of assets, level of unanticipated inside

participation, change of ROA, and industry adjusted 3 years CAR excluding first day return. They use ordinary least squares (OLS) regression to correlate those respective dependent variables with several control variables, viz the log of firms' total assets, percentage growth in assets, ROA, industry average price-to-book ratio, core capital ratio, the dummy of New York Stock Exchange (NYSE), AMEX or NASDAQ listing, returns on the thrift index, six weeks change in interest rate, and ten year constant maturity treasury rate. They find that first day returns are higher with the percentage of insider purchasing, but no evidence in relation to future performance. The offer size reduces the first day return and enhances expected return. They also indicate unanticipated levels of managerial participation are negatively related to the size of the offer.

Gonzalez and James (2007) examine bank relationship for technology and non-technology companies in terms of post IPO performance. Their data consists of 529 technology and 142 non-technology post-listing IPOs during 1996 to 2000 in the US. Their dependent variables include firm size, dummy of technology industry, first day returns, year 1 returns, year 2 returns, and year 3 returns. They apply the dependent variables to the regression with several control variables, viz tangible assets, log of age, EBITDA/sales, log of sales, debt/assets, dummy of internet, and VC backing. They indicate that firms having a longer-term relationship with a bank are more profitable, have lower losses, and are more likely to attract VC than firms without banking relations for technology firms. There is a positive association between post IPO operating performance and the existence and size of pre IPO banking relations.

Chahine and Filatotchev (2008) examine the effects of VC affiliation to underwriters on short- and long-term IPO performance in France. Their sample includes 230 small and

medium size companies listed in France from 1996 to 2002. They examine IPO performance through several variables, viz initial underpricing, adjusted earnings surprise, BHAR and the monthly BHAR. Their main explanatory variables are VC-backed IPOs dummy, underwriter reputation, market return, market volatility, and bubble period dummy. They suggest that IPOs with affiliated VCs in general, and particularly those affiliated with more prestigious underwriters, have a higher long-term abnormal return than both non-affiliated and non-VC backed IPOs.

There are also several papers that consider short- and long-term performance in Asian developed markets. Cheng, Cheung and Tse (2006) test the performance of IPOs before and after 1994 regulatory change in Hong Kong. They use first day return, buy-and-hold market adjusted 1 year, 2 years and 3 years return, and subscribe-and-hold market adjusted 1 year, 2 years and 3 years return as metrics for short- and long-term IPO performance. Their findings show that IPOs listed before and after the regulatory change provide a similar first day return. Their results also indicate there is no significant difference in long-term performance between IPOs listed before and after the change. ROA, abnormal long-term return, Tobin's Q and first day return appear most frequently in prior research as the long- and short-term IPO performance indicators in developed markets. This research follows the present literature by choosing those variables to be the standard for IPO performance in New Zealand.

2.2.2 IPO Performance in Developing Markets

There are several papers investigating IPO long-term performance in Asian developing markets. Allen, Morkel–Kingsbury and Piboonthanakiat (1999) examine long-term IPO performance in Thailand. They use a sample of 150 IPOs listed on the Thai Stock Exchange for the years 1985 to 1992. Their dependent variables are two year stock return, two year

equally weighted adjusted return, and two year value-weighted adjusted return. They apply dependent variables to the multiple regressions individually, with several control variables, viz initial return, market return, issue size, volume, and firm age. They indicate that IPOs with a higher initial return tend to have the worst aftermarket performance in Thailand. They also indicate smaller issues tend to perform better than larger issues in the long term, while the younger firms have lower initial return but higher long-term return.

Durukan (2002) examines the relationship between performance of IPOs and factors that may affect IPO returns in Turkey. His sample consists of 173 IPOs from 1990 to 1997 on the Istanbul Stock Exchange. He uses initial returns, opening price return, intraday return, and market adjusted abnormal returns to indicate short-term IPO performance, and then uses 12 month, 24 month and 36 month raw aftermarket returns to indicate long-term IPO performance. Several independent variables are investigated: firm size, firm age, privatization, ratio of total public share offering, gross proceeds from IPO, dummy of foreign investors remaining, debt to equity (D/E) ratio, price to earnings (P/E) ratio, and method of IPO. He indicates long-term return is negatively related to short-term return; opening price return is negatively related to initial return; and long-term IPO performance does not underperform the market performance. Durukan also indicates D/E ratio and firm age are positively related to short-term IPO performance, but firm size and total public IPO offerings are negatively related to long-term IPO performance. The results seem at variance with those from some developed markets.

Ghosh (2005) examines the post-listing performance of IPOs in the Indian banking industry selecting 24 bank IPOs that listed in the 1990s in India. He tests long- and short-term performance of IPOs based on 1, 3, 6, 12, 18, 24, 30, and 36 month index data. His dependent

variables include monthly BHAR, ROA, the ratio of operating profit to working fund, the ratio of interest income to working fund, the ratio of non-performing assets to net advances, profit per employee, and total capital to risk weighted asset ratio. He indicates that there is no significant evidence for the IPOs based on BHAR and other dependent variables. But the accounting factors show improvement of long-term IPO performance in the post-listing years. These results are the opposite of findings for the Chinese stock markets, (Kao, Wu and Yang, 2009).

Long- and short-term performance of IPOs has been widely tested by researchers in mainland China. Chen, Firth and Kim (2000) examine the post-issue market performance of IPOs in China. Their sample consists of 277 A-share IPOs and 65 B-share IPOs which had post-listed on SHSE and SZSE over the period 1992-1995. The post-listing performance of IPOs involves tests over two intervals, the first day initial return and two- or three-year returns. Finally, they use initial return, market-adjusted BHAR, and wealth relative up to a holding month, and three years of post-listing performance as the dependent variable of short- and long-term IPO performance. They use three years post-listing performance as the dependent variable in the regression with several independent variables, viz log of total assets, log of firm age, initial period return, the rate of earning growth in three years, percentage of institutional shareholdings, dummy of foreign shareholdings, dummy of SHSE listing, and dummy of listing year. They indicate A-share IPOs are more severely underpriced during the initial return period than B-share IPOs; the initial returns of A-shares are extremely high and exceed most other countries. B-share IPOs underperform A-share IPOs during long-term performance. They also indicate that economic factors determining the post-issue performance of IPOs differ across the A-share and B-share samples.

Kao, Wu and Yang (2009) examine the relationship between regulations, earnings management and post IPO performance on the Chinese stock market. Their sample consists of 366 firms that issued A-shares for the first time from January 1, 1996 through February 11, 1999. They measure firm performance by ROA, abnormal first day return (ARET), and CAR. They select pricing period performance dummy, aggressive dummy, market, size, leverage, and industry as the control variables. They find that, on average, Chinese IPO firms report a decline in post-IPO profitability and poor long-term stock performance. Their results also indicate that some of the IPO firms that make extremely optimistic forecasts decrease after the introduction of penalty regulations. IPO firms with overoptimistic earnings forecasts are likely to have lower first day returns and worse post-IPO performance than others. Their findings indicate that the short-term performance of Chinese IPOs outperforms, in most of cases, the long-term IPO performance. But Ghosh (2005) provides confounding evidence, finding no similar evidence for IPOs when using BHAR.

The use of regression models is the predominant approach for assessing short- and long-term performance, viz, Ljungqvist (1997), Allen, Morkel–Kingsbury and Piboonthanakiat (1999), Chen, Firth and Kim (2000), Durukan (2002), Wilbon (2003), Ghosh (2005), Cheng, Cheung and Tse (2006), Jaskiewicz, Gonzalez, Menendez and Schiereck (2005), Guo, Lev and Shi (2006), Johnston and Madura (2006), Goergen, Khurshed and Mudambi (2007), Carow, Cox and Roden (2007), Gonzalez and James (2007), Chahine and Filatotchev (2008), and Kao, Wu and Yang (2009). All the above researchers examine IPO performance as dependent variables through regressions.

Jewartowski and Lizinska (2012) study short- and long-term IPO performance in Poland. Their dataset includes 195 IPOs listed between 1998 and 2008 in Poland. They employ

ordinary least square regression and suggest that early market volatility, issuer's size, growth opportunities, and profitability before listing can partly explain the differences of initial return and the long-term underperformance issue.

ROA, abnormal long-term return, Tobin's Q and first day return appear most frequently in prior research as the long- and short-term IPO performance indicators in developing markets. This research follows the present literature by choosing those variables to be the standard for IPO performance in China. However, prior studies predominantly test either short-term or long-term IPO performance over a specific period. This study will fill the gap in the literature and will extend an understanding of the sustainable relationship between the IPO performance and corporate governance. The current study will test the yearly sustainable long-term IPO performance for periods of up to 11 years.

2.3 Corporate Governance on Firm Performance

Key foci of corporate governance are the reduction of agency problems in companies, the improvement of companies' performance, and an emphasis on shareholders' wealth. Corporate governance also includes the relationships among internal and external stakeholders and involves balancing the interests of those stakeholders and the goals by which the corporation is governed. Internal stakeholders are the management, the board of directors and block shareholders. External stakeholders are outside shareholders, creditors, auditors, customers, suppliers, committees, regulators, etc.

Several recent papers have tested CEO, board, ownership, and accounting characteristics on firm performance.

2.3.1 Prior Findings regarding CEO Characteristics

CEO structures have been widely tested by present researchers; most of them focus on the effect of CEO duality and compensation, also gender, on firm performance. The markets, sample sizes, time periods, variables, and major findings are discussed in the later stage of section. These are important issues as they impact the generalizability of the findings. These factors may also significant for the current study in the Chinese and New Zealand markets.

Kren and Kerr (1997) examine the effect of outside directors and board shareholdings on the relationship between CEO compensation and firm performance in US. Their sample consists of 268 firms; 107 post-listed in 1987 and 161 post-listed in 1989. They select log of cash compensation, log of cash and option, and log of value of equity as the dependent variables, and examine those variables by regression analysis with several independent variables and control variables, viz ROA, return on common stock, outside board member percentage, board stock ownership, outsider stock ownership, and CEO stock ownership over firm market value. They find that CEO compensation is more positively related to corporate performance in high board ownership and high outsider board firms than low board ownership and low outsider board firms.

Lippert (1999) examines CEO compensation and corporate governance of multinational and domestic corporations in a sample of 430 domestic and 177 multinational firms in the US in 1992. He uses salary, bonus, equity holdings and executive stock options as dependent variables regressed against standard deviation of returns on equity, average capital expenditure in one year, dummy of finance industry, percentage of inside directors, log of total assets, foreign tax over total tax, and interactive of multinational times average capital

expenditure. He finds that CEO compensation of multinational firms is less aligned to equity performance than domestic firms.

McKnight, Tomkins, Weir and Hobson (2000) examine the relationship between CEO age and top executive pay in the UK. Their sample is from 100 UK origin and publicly held firms, and the data were gathered from annual reports and Financial Analysis Made Easy. They investigate executive pay using CEO age, CEO turnover and turnover by age, shareholder return, and shareholder by age, to explain company performance measured by three different dependent variables, viz salary, bonus and stock options. They indicate that the relationship between CEO salaries and age is significant but weakens over time, and the relationship between CEO age and bonus appears to be non-linear. From age 53, the proportion of bonus as a percentage of salary begins to decrease at an increasing rate.

Davidson III, Nemec and Worrell (2006) examine the relationship between board demographics, such as age and CEO selection. The analysis draws on a sample of 244 CEO successions from CEOs included in Business Week's 1992 report. In their model, the dependent variable is CEO age, and the independent variables are board data, viz board size, director age, director tenure, insider director age, proportion of inside directors, insider director tenure, outside director age, proportion of outside directors, outside director tenure, affiliated director age, proportion of affiliated directors, affiliated director tenure, block share ownership, board and manager votes, number of board meetings, and prior firm performance. They find that boards tend to hire CEOs of an age similar to their own, and this similarity of attraction is stronger in better performing firms, suggesting that its use in board selection of CEO successors may be related to financial outcomes.

Sierra, Talmor and Wallace (2006) examine the relationship between governance and firm performance/executive compensation. Their sample consists of 76 bank holding companies from 1992 to 1997 and their data is collected from Standard and Poor's ExecuComp database. Their dependent variables are log of executive compensation, ROA, dummy of board strength score, and change in executive compensation. They use three-stage least regressions to investigate those variables by several independent and control variables, viz percentage of insider ownership, percentage of outside directors, percentage of directors who have relationships with CEO, percentage of outside directors who sit on at least two other boards, percentage of outside directors who are over 65, dummy of duality, board size, dummy of rating for those companies, risk-priced funding over total assets, sensitivity of CEO stock and option, one year holding period return, log of total assets, standard deviation of ROA in five years, market to book ratio, and CEO experience. They indicate a strong board is positively associated with higher firm performance, lower levels of executive pay and lower growth rates of executive pay. They also indicate higher levels of firm performance and ROA are positively associated with higher pay.

Dorata and Petra (2008) examine the relationship between CEO compensation and especially corporate control characteristics, and CEO duality in the US. The sample of 220 post-listed firms in 2003 represents 143 non-merger/acquisition firms and 77 merger/acquisition firms. They select a percentage of a CEO's performance pay to the total compensation as the dependent variable to indicate CEO compensation, and then investigate it through OLS with several independent and control variables, viz dummy of CEO duality, log of total sales, ROE, dummy of acquisition, the interaction between duality and sales, and the interaction between duality and acquisition. Their results indicate CEO compensation is positively associated with firm size, but unaffected when associated with CEO duality for merging firms. They also find

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that CEO compensation is positively associated with firm size and performance. CEO duality is also positively associated with firm performance and CEO compensation in non-merging firms.

Lam and Lee (2008) examine the relationship between CEO duality and firm performance through the effects of family control factors in Hong Kong. Their sample consists of 128 post-listed public-tradable firms in 2003. Their dependent variables are ROA, ROE, return on capital employed, and market to book value of equity. They investigate those variables through OLS individually with several control variables, viz dummy of CEO duality, percentage of outside directors, dummy of remuneration committee, dummy of nomination committee, log of board size, dummy of firm history whether before 1997, percentage of minority interest in consolidated balance sheet, percentage of individual largest shareholding, current ratio, D/E ratio, dummy of dual listing, dummy of utilities, log of total assets, log of market capitalization, and log of net sales. They find that CEO duality and accounting performance are positively related in non-family firms, but negatively related in family controlled firms. They suggest that CEO duality is good for non-family firms and non-duality is good for family controlled firms. Braun and Sharma (2007) examine the relationship between CEO duality and shareholder return on US-based family-controlled public firms. They find that when family ownership is low, CEO duality is beneficial in terms of stock return.

Lee, Lev and Yeo (2008) examine the relationship between dispersion of top management compensation and firm performance in the US. Their sample consists of 12,197 observations of 1,855 firms post-listed in the period 1992-2003. They measure firm performance by

Tobin's Q and firms' stock returns, and they find that Tobin's Q and stock returns are positively associated with the pay dispersion of top management.

Adams, Gupta and Leeth (2009) test the financial performance of US corporates between 1992 and 2004 to test whether female CEOs would place the firm in a precarious financial condition. They selected more than 1500 firms from the US, which included 61 women who served as CEOs of 63 firms. They compare the male and female CEOs' leadership through several firm performance variables, viz market value, total assets, sales, employees, earning per share, return on assets, and return on equity. Their results indicate that firm performance preceding CEO appointments tends to favour females, implying that female CEOs are appointed to the position largely when the firms are in better financial condition.

From present papers, the studies of CEO characteristics are based more on developed markets, viz UK and US, rather than developing markets. CEO age is U-shaped associated with their pay and firm performance in the UK. The positive relationship between CEO compensation and firm performance, measured by ROA, is less aligned in multinational firms than domestic firms in the US. CEO pay dispersion is positively associated with firm performance; TMT stock based pay is significantly associated with firm performance in the US. CEO duality and accounting performance are positively related in non-family firms, but negatively related in family controlled firms in Hong Kong and the US. CEO duality has no significant effect on firm performance in Malaysia. Administrative expense ratio is positively associated with the probability of financial distress in China. CEO duality and board compensation have no significant effect on firm performance in Hong Kong. Potentially CEO age, CEO compensation, CEO salary, and CEO compensation may be important for the current study as they were found to be significant in prior studies in developed and developing markets.

2.3.2 Prior Findings regarding Board Characteristics

Board structures have been widely tested by present researchers; most of them focus on the effect of outside directors, board size, and female directors' impact on firm performance. The markets, sample sizes, time periods, variables, and major findings are discussed in the later stage of section. These are important issues as they impact the generalizability of the findings. These factors may also significant for the current study in the Chinese and New Zealand markets.

Abdullah (2004) examines the relationship between firm performance, CEO duality and board composition in Malaysia. His sample consists of 313 companies from 1994, 321 companies from 1995, and 318 companies from 1996; all of them were post-listed in the Kuala Lumpur Stock Exchange (KLSE). He uses profit margin ratio, ROE, ROA, and earnings per share (EPS) to indicate firm performance. He finds that board independence and CEO duality have no significant effect on firm performance, and outside directors dominate boards in Malaysia.

Bonn (2004) examines the relationship between board structure and firm performance in Australia. He uses the sample of 84 manufacturing firms in 1999 and the data were collected from the Aspect Fin Analysis database. The dependent variables of ROE and market-to-book ratio were investigated individually through OLS, with several independent and control variables, viz board size, percentage of female directors, percentage of outside directors, director age, and total sales. The results indicate the percentage of outside directors and female directors are positively associated with firm performance, but find no relationship between board size and firm performance.

Bonn, Yoshikawa and Phan (2004) examine the effect of board structure on firm performance in Japan and Australia. The sample of 169 manufacturing firms from the Nikkei 300 Index of Japan and 104 manufacturing firms from top 500 companies in Australia were selected as the data for their study. Their dependent variables are ROA and market-to-book ratio in 1999, and they select board size, percentage of female directors, percentage of outside directors, firm age, and director age in 1998 as the independent variables. They find that board size and director age are negatively associated with firm performance, but the percentage of outside and female directors have no influence on firm performance in Japan. They also find that the percentage of outside and female directors is positively associated with firm performance in Australia.

Dimovski and Brooks (2006) examine the gender composition of boards after an IPO in Australian markets. They chose 108 new IPOs listed on the Australian Stock Exchange from 1994 to 1997. Of these, 54 were listed as top 500 companies in 2002. Their hypotheses are that the proportion of women directors on a company's board increases as the company develops; the proportion of women directors on a company's board is greater in industrial companies and in larger companies. They use proportion of male directors and proportion of female directors as dependent variables to run two ordinary least square regressions. They use three independent variables, viz the firm is industrial as dummy variable, the data on directors is taken at the time of the IPO as dummy variable, and the log of market capitalization of the company. Their results indicate there is no significant change in the numbers or proportions of male or female directors from the IPO event; industrial companies hire more female directors and larger companies are likely to hire female directors.

Mclntyre, Murphy and Mitchell (2007) examine the relationship between board composition variables and firm performance. Their sample consists of 151 firm boards from the Canadian Toronto Stock Exchange 300 Composite Index in 2001. Their dependent variables are Tobin's Q, economic value added, and ROA. They investigate those variables individually through several independent and control variables, viz standard deviation of board member tenure, standard deviation of member age, board size, average tenure of the member on a board, the percentage of board members who are also members of another board, the percentage of board members who are also an officer of another board, number of employees, dummy of CEO duality, and the percentage of outside directors. They find that a high level of experience, appropriate board size, moderate director age, and moderate tenure are positively associated with firm performance.

Staikouras, Staikouras and Agoraki (2007) examine the relationship between bank performance and board size/composition on short-term and three-years' bank performance. They use a sample of 58 large European banks with 174 observations over the period 2002 to 2004. They use ROA, ROE and Tobin's Q as the dependent variables, and investigate them with several dependent and control variables, viz board size, board composition, loan to total assets ratio, loan loss provisions to loans, equity to assets, ratio of operating expense to total assets, log of total assets, and bank specific variables for credit institution. They find that board size is significantly and negatively associated with bank performance, but board composition is insignificantly positively associated with bank performance.

Campbell and Minguez-Vera (2008) examine the relationship between the gender of directors and firm financial performance in Spain. Their sample consists of 68 companies and 408 observations from 1995 to 2000. Their independent variables are Tobin's Q, percentage of

female directors, Blau index of diversity, and Shannon index of diversity. They apply these variables to the OLS and 2SLS regressions individually, with several independent and control variables, viz Tobin's Q, percentage of female directors, dummy for female directors, Blau index of diversity, Shannon index of diversity, board size, log of board size, leverage, ROA, and log of the book value of total assets. They find that percentage of female directors has a positive association with firm value.

From present papers, female directors are positively associated with firm performance in Spain, US, New Zealand and Australia, but have no influence in Japan. Firm valuation is significantly associated with board structure in the US. Outside directors are positively associated with firm performance in Australia, New Zealand and Europe, but have no influence in Japan and Malaysia. Independent directors are negatively associated with the probability of financial distress in China. Firms with higher managerial membership on the board tend to pay lower cash dividends in China and Hong Kong. Board size is negatively associated with firm performance in Japan, Taiwan and Europe, but positively associated with firm performance in India, with no influence in Australia and Malaysia. Director age is negatively associated with firm performance in Japan. High levels of experience, appropriate board size, moderate director age, and moderate tenure are positively associated with firm performance in Canada. A board would benefit from professional numbers, such as people with backgrounds in finance, accounting and marketing in the US. Board compensation has no significant effect on firm performance in Hong Kong. Firms with a large percentage of outside directors are less likely to face financial distress in Taiwan. Potentially number of female directors, percentage of independent directors, number of directors, chairman age, and chairman experience may be important for the current study as they had been found to be significant in prior studies in developed and developing markets.

2.3.3 Prior Findings regarding Ownership Characteristics

Ownership characteristics have also been widely tested by present researchers; most of them focus on managerial, institutional, and state ownership and their effect on firm performance. The markets, sample sizes, time periods, variables, and major findings are discussed in the later stage of this section.

Chen (2001) examines the relationship between corporate performance and ownership structure in China. His sample consists of 434 manufacturing firms post-listed on SHSE and SZSE in 1997. He uses Tobin's Q as the dependent variable to indicate governance performance, and applies it through OLS with several independent variables, viz percentage of one shareholder holding, percentage of ten shareholders' holding, percentage of Bureau of State Property Management (BSPM), percentage of legal person share, percentage of domestic legal person share, percentage of top management share, tradable share, dummy of listed year, log of total book assets, average sale growth over past three years, standard deviation of sales over past three years, ROA, and total liability divided by total book assets. Chen's results indicate there is a strong relationship between corporate performance and ownership concentrations, viz firm size, leverage ratio, variance of sales, growth of sales and firm age. He also indicates SOE share is negatively associated with corporate performance, but domestic institutional and managerial ownership improves firm performance.

Dwivedi and Jain (2005) examine corporate governance and firm performance in India. Their sample consists of 340 large post-listed Indian firms for the period 1997 to 2001. They select Tobin's Q as the dependent variable to indicate the firm performance, and investigate it through regression with several independent and control variables, viz board size, advertising intensity, research and development intensity, gross fixed assets, current year return on

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capital employed (ROCE), previous year ROCE, D/E ratio, foreign shareholding, financial institution shareholding, directors' shareholding, public shareholding, and trading activity. They find that foreign shareholding and board size are positively associated with firm value and shareholder wealth, and directors' shareholding and public shareholding have a negative association with firm value and shareholder wealth.

Li, Lam, Qian and Fang (2006) examine the effect of institutional ownership on corporate governance and firm performance in Hong Kong. Their sample consists of 433 publicly traded firms from Hong Kong Stock Exchange (HKEX) and those companies were post-listed from 1996 to 1998. Their dependent variables are short-term ROA, manager compensation over profit, and dummy of institutional ownership. They investigate those variables individually through OLS, with several independent and control variables, viz ownership concentration, percentage of institutional ownership, CEO duality, profit fluctuation, board compensation, firm size, firm age, and percentage of family ownership. They find institutional ownership has significant influence on board compensation, CEO duality, leadership diversity, and ownership concentration, but has no significant effect on institutional ownership or short term firm performance. They also indicate CEO duality and board compensation have no significant effect on firm performance.

Chou, Wu and Chen (2007) examine the relationship between managerial ownership and firm performance in Taiwan from 1997 to 2002. Their sample consists of 256 firms with 1,530 year-observations in the Taiwan Exchange and the data are collected from the Taiwan Economic Journal data bank. Their dependent variables are Tobin's Q and managerial ownership of low, middle and high percentage managerial ownership firms. They use three-stage-least regressions to investigate those variables with several independent and control

variables, viz Tobin's Q, percentage of managerial ownership, annual advertising expenditure to sales, annual research and development expenditure to sales, debt to book value of total assets, log of book value of assets, standard deviation of a firm stock price, beta, dummy variable of affiliated enterprise, and firm age. They find that managerial ownership is positively associated with firm performance for middle percentage managerial ownership firms, but managerial ownership is negatively associated with firm performance for high percentage managerial ownership firms. Hu and Zhou (2008) also indicate firms with significant managerial ownership outperform firms whose managers do not own equity shares, but the link between firm performance and managerial ownership is non-linear.

Hu and Zhou (2008) examine the effect of managerial ownership on non-listed Chinese firms' performance. They use a sample of 1500 non-listed Chinese firms from five cities, viz Shanghai, Beijing, Guangzhou, Tianjin and Chengdu, and ten industries, viz apparel leather goods, consumer goods, electronic components, electronic equipment, vehicles and vehicle parts, accounting and related services, advertising and marketing, business logistics, communication services, and information technology services through the period 1998-2000. They use ROA and value added as the dependent variables, and apply the regression with some independent variables, viz percentage of managerial ownership, managerial ownership dummy, log of assets, log of labour, firm age, debt to equity ratio, external auditor dummy, percentage of legal person shares, legal person shares/state shares, percentage of individual shares, and individual shares dummy. They find that firms with significant managerial ownership outperform firms whose managers do not own equity shares. But their results indicate the link between firm performance and managerial ownership is non-linear. Managerial ownership is negatively associated with firm performance when the ownership is

above 50%. They use this result as the basis for a hypothesis that the inflection point occurs at an ownership far above 50% for listed firms[3].

From present papers, there is a strong relationship between corporate performance and ownership concentrations. SOE share is negatively associated with corporate performance. Managerial ownership is positively associated with firm performance for middle percentage managerial ownership firms, but managerial ownership is negatively associated with firm performance for high percentage managerial ownership firms. The link between firm performance and managerial ownership is non-linear in China and Taiwan. Institutional ownership improves the firm's performance in China, but there is no significant effect on firm performance in Hong Kong. In India, foreign shareholding has a positive association with firm value and shareholder wealth, and directors' shareholding and public shareholding are negatively associated with firm value and shareholder wealth. Ownership concentration, state ownership, and ultimate owner are negatively associated with the probability of financial distress, but managerial ownership has no effect in China. Insider ownership has a negative effect on firms' performance in New Zealand. Block ownership has a positive effect on firm performance in New Zealand. Firm valuation is significantly associated with percentage of institutional and blockholder ownership in US. Potentially blockholder ownership, largest shareholding, insider ownership, SOE ownership, and legal person ownership may be important for the current study as they were found to be significant in prior studies in developed and developing markets.

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[3] The hypothesis establishes on the level of monitoring and regulation.

2.3.4 Prior Findings regarding Accounting Characteristics

Audit characteristics are also important to explain firm performance. Ballesta and Garcia-Meca (2005) examine the relationship between audit qualifications and corporate governance in Spanish firms. Their sample consists of non-financial firms post-listed on the Madrid Stock Exchange over the period 1999-2002. Their dependent variable is the dummy of qualified audit opinion; they investigate it through OLS with several independent and control variables, viz ROA, leverage, log of total sales, board size, dummy of family board member, percentage of blockholder ownership, percentage of insider ownership, and current assets over current liabilities. They find that higher insider ownership provides better corporate governance and these firms are less likely to receive qualified audit reports. A high percentage of family board members increases the possibility of obtaining a qualified report.

Lin and Liu (2009) examine the impact of corporate governance on auditor choice in Shanghai and Shenzhen A share markets. They chose the A-share firms listed from 2001 to 2004, and then separated all auditors into two groups: the largest 10 auditors to proxy for high quality auditors and others as low quality auditors. Their hypotheses are that the firms with higher percentage of large block shareholding will result in a company being less likely to hire high quality auditors; the firms with fewer supervisory board members are less likely to hire high quality auditors; and the firms with duality of the positions of CEO and chairperson are less likely to hire high quality auditors. They chose 184 samples. They use dummy of quality auditors choice as dependent variable, and then apply independent variables, viz the percentage of largest owner's shareholding to the total shares, number of supervisory board, CEO duality, log of total assets, asset turnover ratio, return on assets, current assets on total assets, total liabilities on total assets the absolute value of beta and the firm listing years to the regression. From the results, they indicate that firms with larger

controlling shareholders, smaller supervisory boards, and when the CEO and chairperson are the same person, are more likely to choose low quality auditors. Their results correspond with their three hypotheses.

From present papers, firms with larger controlling shareholders, smaller sized supervisory boards and when the CEO and chairperson are the same person, the more likely they are to choose low quality auditors in developing markets. Higher insider ownership provides better corporate governance and less likelihood of receiving a qualified audit report; a high percentage of family board members increases the possibility of obtaining a qualified report. Auditors' opinion is negatively associated with the probability of financial distress in China. Audit committees have a positive effect on firm performance in New Zealand.

Accounting characteristics and other factors also affect firm performance. Morck, Shleifer and Vishny (1989) examine the alternative mechanisms for corporate control on companies' performance. They select a sample of publicly traded 500 firms from 1980 in US. They also select three different measures of firm performance as the dependent variables, viz Tobin's Q, stock market abnormal returns, and the employment growth rates. They apply those variables to the multiple regression with several independent variables, viz log of total market value, age of the CEO, equity stake of CEO, industry, industry abnormal return, industry employment growth and so on. Their results indicate that when a firm significantly underperforms in its industry, top management are more likely to turnover. The results also indicate that boards are not the main force behind removing unresponsive managers in poorly performing industries.

Firth (1997) examines the takeover process and measure returns of target firms, acquiring firms, and overall performance in New Zealand. His sample consists of 162 corporate takeovers during the period 1970 to 1987. The dependent variable is CAR of target firms, and the control variables are square root of percentage of insider ownership, dummy of contested by the target firm, and dummy of whether or not the takeover is successful. Their results indicate significant positive returns to target shareholders and negative abnormal returns to the acquirers, and acquiring firm directors' shareholdings has a positive association with abnormal returns.

Eldenburg and Krishnan (2003) compare the governance of municipal district hospitals and private non-profit hospitals with their operational performance. Their sample consists of 14 district hospitals and 30 non-profit hospitals over 1981 to 1998 in California. Their dependent variables are operating margin and its change, expense and its change, number of days from admission to discharge and its change, CEO compensation, and net revenue per patient day. They apply those variables to the regression individually with several control variables, viz district hospital dummy, proportion of Medicare patients and Medi-Cal patients, staff beds, average number of days from admission to discharge, population, unemployment rate, per capita income, number of births, proportion of outpatients, and year dummy. Their results indicate CEO compensation in district hospitals is lower than in the profit hospitals, and has a positive relationship with operating margin. They suggest that the district board would benefit from professional numbers, such as people with backgrounds in finance, accounting and marketing.

Sanders and Boivie (2003) examine the relationship between corporate governance characteristics and market valuation of new US internet firms. Their sample consists of 184

IPOs post-listed from 1993 to 1999. They use market capitalization as the dependent variable to indicate the market valuation, and then investigate the variable by longitudinal models with several independent variables, viz percentage of TMT, outsider, director, blockholder, venture capital and institutional ownership, TMT stock based pay, percentage of outside directors, dummy of listing years, venture capital equity sold, firm size, sales growth, net income, firm age, dummy of software and services, dummy content, and dummy of internet service providers. They find firm valuation is significantly associated with TMT stock based pay, percentage of institutional and blockholder ownership, board structure, venture capital participation, and firm age.

Bauer, Guenster and Otten (2004) examine the effect of corporate governance on stock returns, firm value and performance in Europe. Their sample consists of 249 firms in 2000 and 269 firms in 2001 from FTSE Eurotop 300. They use Tobin's Q and ROE as the dependent variables, and investigate them individually through OLS with several independent and control variables, viz log of firms' governance rating, log of the book value of assets, log of firm age in years, current ROE, present year ROE, dummy of sector, dummy of country, and log of book to market ratio. They find a strong relationship between governance and firm value, and the excess returns to corporate governance should translate into a higher firm valuation for better governed firms in the long run.

Ting (2006) investigates whether corporate governance adds firm value during poor economic conditions in Taiwan. The sample consists of 207 post-listed IPOs on the Taiwan Stock Exchange from 1992 to 2002. The dependent variables are EPS, ROA, ROE and 30, 90, 180 days market returns, and he investigate those variables individually through OLS with several control variables, viz percentage of managerial shares, percentage of blockholder

shares, board size, number of block holding directors, long-term and short-term investment over total assets, dummy of big four auditors, dummy of CEO duality, economics, dummy of high technology industry, log of total assets, listed date, leverage, total export over total assets, and agency cost. He finds positive effects of corporate governance on firm performance, which indicates the importance of corporate governance during poor economic conditions.

Shekhar and Stapledon (2007) examine governance structures of IPOs in Australia. They select 334 companies listed on the Australian Stock Exchange from 1996 to 2001, sub-dividing the sample into 285 non-VC backed companies and 49 VC backed companies. They also separated the sample into four industry groups, viz metals, services, finance and insurance, consumer products. Their dependent variables are board size, percentage of non-executive directors and number of outside blockholders. First they apply industries as dummy independent variables to the regressions, and find that service, finance and insurance and consumer product industries are statistically significant to explain the dependent variables, viz board size and percentage of non-executive directors. They then use VC, CEO ownership, log of total assets, firm profitable (dummy), PPE, firm age and industry (dummy), bonus grant and option grant as the independent variables to explain the dependent variables, viz board size, percentage of non-executive directors and outside blockholders. Their results indicate that board structures are influenced by the industry of the firm, and venture capital firms are more likely to have larger boards and a higher number of outside directors. CEOs in VC backed firms have higher CEO ownership, and CEO ownership is negatively related to board size and outside blockholders.

Gao and Kling (2008) choose many observations listed at Shanghai and Shenzhen stock exchanges through 1998 to 2002. Their sample of 695 in 1998 increases to 1108 in 2002 providing 4559 observations in total. They examine dependent variable tunnelling by some independent variables, viz single dummy (if one blockholder owns more than 50% shares), multi dummy (if two blockholders own more than 10% shares separately), board size, board meetings per year, percentage of outside directors, management ownership, audit dummy, big five audit dummy (if the audit firms are one of the big five), B or H-shares listing dummy, state controlled dummy, percentage of institution ownership, either blockholder is institutional, log of sales, leverage, eastern coastal region dummy, and firm operates in a protected industry dummy. The results indicate that four mechanisms of corporate governance could help to improve internal and external governance structures in China, including more high quality audits, increasing the stock ownership of senior managers, increasing the number of block shareholders, and decreasing the effect of SOEs. A company that belongs to a business group and issues B- or H-shares also leads to good performance.

Li, Wang and Deng (2008) examine the influence of ownership structure, board structure, agency costs, and audit opinion on firm financial distress in China. Their sample compares 404 firms in financial distress, one year and two years before their financial distress with 404 healthy firms. All firms are post-listed from 1998 to 2005 in China. They use dummy of financial distress at prior one and two years as the dependent variables, and investigate them individually through logistic regression with several control variables, viz percentage of largest shareholder's ownership, Herfindahl index of ownership concentration, ownership balancing degree, percentage of SOE, percentage of managerial ownership, ultimate owner, percentage of independent directors, administrative expense ratio, auditor's opinion, financial leverage, current ratio, and sales margin. Their results indicate that ownership concentration,

state ownership, ultimate owner, independent directors and auditors' opinion are negatively associated with the probability of financial distress. They also find that administrative expense ratio is positively associated with the probability of financial distress, but managerial ownership has no effect.

Reddy, Locke, Scrimgeour, and Gunasekarage (2008) examine the effect of corporate governance on small-cap companies' financial performance. With a sample of 355 companies in New Zealand from 2001-2005, they investigate governance changes using insider ownership, block ownership, board size, board independence, debt, dividend, and board committees to explain company performance measure by three different dependent variables, viz Tobin's Q, operating income and return on assets. The number of female directors, firm size, risk, audit committee, remuneration committee, dividend/assets ratio, standard deviation of the return on assets, and industry are also named as control variables. They apply those variables to OLS and two stage least squares regression. Insider ownership and block ownership are determined as dependent variables in the first stage, and then the value determined in the first stage OLS regression are used to determine the performance, viz Tobin's Q, operating income and return on assets. They find that insider ownership, firm size and the use of a remuneration committee have a negative effect on firm performance. Board independence, audit committee, block ownership, leverage, female directors and dividends have a positive effect on firm performance.

Zhang (2008) compares the cash policy of Chinese firms listed in Hong Kong and on the Mainland. Choosing 123 firms from H-share and red chip firms listed in Hong Kong, she then selects 123 industries and size controlled A-share companies listed in Shanghai and Shenzhen as a matching sample from 1999 to 2003. She investigates dividend policy using

several different board factors, ROE, sales growth, firm size, cash balance, debt to asset, fixed effects, control for the need of capital, fixed payment pattern, and ownership concentration dummy to explain dividend policy measure by dependent variable dividend to earnings ratio, and then applies it to the second stage regression to explain the dependent variable of Tobin's Q. Her results indicate firms that have higher managerial membership on the board tend to pay lower cash dividends in both Mainland- and Hong Kong-listed companies and insiders may take advantage from outside shareholders. Zhang also finds that the pricing mechanism of Hong Kong-listed Chinese firms appears to encourage managers to pay dividends, but the same mechanism is not found to exist in the Mainland A-Share listed firms. High dividend payment is a way for agency theory to control managers and solves the agency problem, and controlling shareholders in the mainland reduce the agency cost of free cash flows.

Chang (2009) examines whether corporate governance characteristics correlate with financial distress in Taiwan. The sample consists of 104 financial distressed firms and pairs each one of them with a non-financial distressed firm, making a total of 208 firms from 2002 to 2007. The research selects a dummy of financial distress as the dependent variable, and investigates it through OLS with several control variables, viz number of outside directors, CEO duality, dummy of insiders who have 0% equity ownership, number of female directors, board size, number of directors on two or more boards, dummy of director with over nine years of tenure, number of employees, market capitalization, and percentage of outside directors. The results indicate that firms with a large percentage of outside directors are less likely to face financial distress, but large board size is more likely to be correlated with financial distress.

Chen and Dempere (2009) examine the relationship between key corporate governance characteristics and IPO bank acquisitions. Their sample consists of 128 post-listed bank holding companies between 1996 and 2004. They use a dummy of acquisition event as the dependent variable and apply it to the logit regression model with several control variables, viz CEO duality, insider reputation, dummy of equity based incentive plan for insiders, board size, percentage of outside directors, percentage of insider ownership, log of total assets, firm age, underwriter reputation, first day abnormal return, and a dummy for offering method. Their results indicate insider ownership, total assets, and tangible assets are significantly positively related to bank acquisition. They also find that the equity based compensation plans for insiders significantly reduce the likelihood of IPO banks being acquired.

Firm performance can be explained by many factors, especially accounting factors. Firm valuation is significantly associated with venture capital participation and firm age in the US. Firm size and the use of a remuneration committee have a negative effect on firm performance in New Zealand. A strong relationship between governance and firm value and the excess returns to corporate governance should translate into a higher firm valuation for better governed firms in the long run in Europe. Four mechanisms of corporate governance could help to improve internal and external governance structures in China; they are more high quality audits, increasing the stock ownership of senior managers, increasing the number of block shareholders, and decreasing the effect of SOEs. Leverage and dividends have a positive effect on firm performance in New Zealand. Total assets and tangible assets are significantly positively related to bank acquisition.

There are also several papers that focus on information transparency and VC effects. Sheu and Lin (2006) examine the relationship between information transparency and the role of

VC in Taiwan IT IPOs. The sample consists of IT IPOs post-listed in 2001, 2002 and 2003, and each study period is discussed separately. Their dependent variable is total scores of information disclosures. They investigate the variable by the OLS with several control variables, viz dummy of venture capital, percentage of shareholding of VC, number of VCs, dummy of VC acts as director or supervisor, company size, and ratio of long term debts to shareholders' equity. Their results indicate dummy of VC, the percentage of shareholding of VC and number of VCs are significantly positively related with information transparency in 2001, 2002, and 2003.

According to Cheung, Jiang, Limpaphayom, and Lu (2008), one of the unique features of the Chinese stock market is that approximately two-thirds of China's listed companies are controlled by SOEs. The primary goal of these companies is to achieve policy goals rather than maximise shareholders' wealth; their goals may conflict with the interests of minority (outside) shareholders. Most of the IPOs were SOEs and if they are mostly controlled by other SOEs this raises interesting issues about governance, such as managerial hegemony versus shareholder wealth maximisation. The researchers examine the quality of corporate governance practices of the 100 largest Chinese listed firms in 2004. Their sample is based on the total revenue of all Chinese firms listed around the world, including domestic and overseas markets. The data sources include annual reports, articles of association, memorandums of association, notices to call shareholder meetings, annual general meeting minutes, company websites and analyst reports. The results show that Chinese firms have been making progress in corporate governance reform. Another distinctive finding is that the overseas listed Chinese firms tend to show more regard for the role of stakeholder transparency than domestically-listed Chinese firms, viz A- and B-shares.

Recent studies have broadened in coverage to include many countries which are emerging market. Cheung, Jiang, Limpaphayom and Lu (2010) examine the progress of corporate governance practice of Chinese listed companies. Their sample includes 100 of the largest listed firms in China from 2004 to 2006. Their investigation reveals that Chinese companies are making progress in corporate governance reform. They also find a positive relationship between market valuation and governance practices. Yang, Chi and Young (2011) provides a review of Chinese corporate governance. They indicate that most of the governance mechanisms are less effective in China; even those mechanisms that are deemed to be effective in developed nations. They believe that the large percentage of SOE ownership, strong political connections between firms and government, and lack of independent judicial system causing such problem.

Shan and McIver (2011) investigate the relationship between corporate governance instruments and firm financial performance in non-financial Chinese firms. Their panel dataset includes 120 A-Shares listing from 2001 to 2005. Their dependent variable is Tobin's Q and explanatory variables are independent directors, professional supervisors, and ownerships. They indicate that board independence is positively significant on the performance of large companies while supervisory board does not have a significant impact on firm performance in China.

The monitoring and interest assimilation of 613 Taiwanese listed firms from 2005 to 2010 in corporate governance, using panel data, are analysed by Yang, Lin and Yen (2012). They indicate that greater divergence between the number of board seats controlled and voting rights leads to a higher opportunity for better corporate performance. They also find that the interest of external shareholders may be taken over by large shareholders.

The more recent findings for China are not surprising given results from analyses in other countries. Pant and Pattanayak (2010) test the combination of market competition and corporate governance impact on firm performance in India. They select 1807 firms for the years 2000 to 2003. Major governance variables in their study relate to ownership. They find that insider ownership, domestic institutional, and foreign ownership have a positive impact on the firm productivity. They also indicate that debt intensity has a negative impact on firm productivity.

Braga-Alves and Shastri (2011) examine the relationship between corporate governance, valuation, and operating performance in Brazil. The sample includes 236 non-financial firms listed from 2001 to 2005 on the Sao Paulo Stock Exchange. They find that higher scores of governance are related to greater market value, but not related to better operating performance in Brazil.

Kawaguchi and Nishitani (2012) examine the relationship between corporate governance and the female full-time employees in Japan. The sample includes 2531 Tokyo Stock Exchange listed firms in 2005. They find that institutional ownership is positively related to female workplace, strong institutional investors are correlated with more female full-time employees and managers.

Jiraporn, Kim and Kim (2011) investigate the relationship between dividend policy and corporate governance in the United States. Their data sample includes 16,013 observations from 2001 to 2004. They employ a two-stage least square model and find that corporate governance quality has a significant impact on the dividend policy decisions.

In this study, the main independent corporate governance characteristics will be CEO, board, and ownership variables; accounting performance and audit factors will also apply to the 2SLS regressions as the control variables. Potentially audit committee, board committee, remuneration committee, and number of committees may be important for the current study as they were found to be significant in prior studies in developed and developing markets.

2.4 IPO Performance and Corporate Governance

The relationship between IPO performance and corporate governance has been widely tested in both developed and developing markets in recent years. This section summarizes those papers across different countries and markets. Most previous studies focused on large and developed economies, such as the United States, United Kingdom, other European nations, Australia and Japan. This study provides evidence from China, which is the world's fastest growing economy and which has developing stock markets, and also included New Zealand, which is a small developed economy.

2.4.1 IPO Performance & Corporate Governance Studies in Developed Markets

There are many papers examining the relationship between IPO performance and corporate governance in developed stock markets, especially the US. Ritter (1991) examines the long-term performance of IPOs in the US with a sample of 1,526 IPOs from 1975 to 1984. His dependent variable is three years BHAR and the research applies the dependent variable to the regression with several control variables, viz market adjusted initial return, log of firm age, three years value weighted total market return, annual volume of IPOs in the first year, dummy of oil industry, and dummy of banking industry. Ritter could not resolve the relationship between long-term underperformance and short-term underpricing, but he indicates that the offering price is not too low and the initial return is very high. He also indicates that investors are overoptimistic about young IPO firms' earning potential.

Brau and Osteryoung (2001) examine the relationship between successful micro-IPOs and small corporate offering registration (SCOR) documents, which include corporate governance factors. Their sample consists of 73 SCORs from 1988 to 1998 from Washington State in the US. Their independent variable is the dummy of IPO success. They select several governance characteristics as the control variables, viz number of directors, largest block percentage, maximum percentage of insider holding, minimum percentage of insider holding, dummy of insider family relationship, and firm market capitalization. Their control variables also include number of employees, after tax earnings, tangible book value, total debt, remuneration, stock price and several marketing mechanisms and expenses factors. They use logistical regression to explain dummy of success by those control variables. Their results indicate that ownership and governance variables are the best determinants to explain the success of micro IPOs.

Chemmanur and Paeglis (2005) test the relationship between management quality, certification and various aspects of IPO and post-IPO performance. Their sample consists of 1,446 IPOs from the US between 1993 and 1996, and the sample is collected from the Platinum New Issue database. Their dependent variables include the log of offer size, the reputation of the underwriting syndicate, underwriting spread as a percentage of the offer price, other offering expenses as a percentage of the offer size, the first day return, and institutional holdings of shares offered at the end of the first quarter. They test those variables individually through regressions by some independent variables, viz size of the firm's top management team, book value of the firm's assets, log of the book value of assets, book value square, industry dummy, percentage of management team with MBA degree, percentage of professional staff with backgrounds in law or accounting, average tenure of the management team, log of firm age, number of non-profit boards, number of outside directors,

and so on. Their results indicate better and more reputable managers have larger IPO offer size; more reputable underwriters are associated with firms of higher management quality and reputation; underwriting expenses are negatively related to management quality; high management quality attracts more institutional investors; management quality and reputation are negatively related to IPO underpricing. They also indicate that management quality and reputation explain the long-term and operating performance of IPOs.

Daily, Certo and Dalton (2005) examine the factors generally considered to impact IPO performance to assess the extent to which investment bankers may use the information to determine the offering price and spread. Their sample consists of 192 IPOs from 1996 and 1997 in the United States. Their dependent variables are offer spread and offer price. Their independent variables include dummy variable of high technology industry, dummy variable of founder CEO, CEO retained equity, board composition, board size, board prestige, venture capital equity, firm size, firm age, and firm return. The assumption is that investment bankers will utilize publicly available information in setting the offer price range and the offer price for IPO securities. But their results indicate that there is no evidence that the independent variables are related to either IPO offer price spread or IPO offer price.

Jain (2005) examines the relationship between post-listing IPO performance and the financing decision of founder versus non-founder CEOs. His sample consists of 258 post-listing IPOs in 1997 in the US. He separates the samples into two groups, founder CEO firms and non-founder CEO firms. He chooses four dependent variables, viz post IPO capital expenditures, post IPO research and development investment, propensity to issue equity, and change in leverage. Their independent variables are CEO age, CEO functional experience, same CEO duality, CEO board influence, venture capital participation, post IPO equity

financing, firm size in millions of dollars, research and development intensity at IPO, capital expenditure intensity at IPO, debt over assets at IPO, asset intensity at IPO, and operating cash flow over assets at IPO. His results indicate that founder CEO firms have higher post IPO capital expenditures and lower research and development expenditure compared to non-founder CEO firms. The results also indicate founder CEO firms become more leveraged post IPO and have a lower propensity to issue equity after IPO compared with non-founder CEO firms.

Jain and Martin Jr (2005) examine whether audit quality affects post-IPO survival in the US. Their sample includes 800 IPO firms listed from 1980 to 1990, and their analysis extends to the end of 1996. Of those 800 firms, 653 chose top eight auditing firms and the rest of them chose non-prestigious auditors. Their analysis includes two stages. In the first stage, they conduct a parametric analysis to determine whether prestigious auditors significantly affect IPO survivals. In the second stage, they conduct a semi-parametric analysis. They also separate the sample into two groups, survivors and non-survivors. Their independent variables include gross proceeds, investment bank prestige, issued age, initial returns, percentage of ownership retention, analyst following, venture capital participation, pre IPO operating cash flow over assets, pre IPO operating return on assets, pre IPO return on sales, pre IPO cash flows over sales, and pre IPO sales growth. Their results indicate that investment in a high quality audit leads to a significantly lower post IPO failure rate, and the association between audit quality and post-IPO survival is stronger when investment bank prestige is low.

Dempere (2007) examines the impact of corporate governance on bank IPOs. The sample consists of 128 bank holding IPOs during 1997 to 1999. His dependent variables are first day

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abnormal return and six months average BHAR. He then investigates them individually to the OLS with several control variables, viz dummy of CEO duality, independent audit, independent nominating, independent compensation committees, dummy of insider insurance, board size, percentage of outside directors, percentage of insider ownership, number of outside directors, percentage of insider knowledge and experience in banking industry (excluding CEO), bank age, dummy of underwriter, and dummy of best efforts method. Their results indicate that compensation committee, percentage of outside directors, insider compensation plan, bank age, and bank size have a positive relationship with short-term IPO performance. They find that nominating committee independence and directors' knowledge and experience have a positive relationship with long-term IPO performance, and percentage of outside board, CEO duality, percentage of insider ownership and underwriter reputation have a negative relationship with long-term IPO performance.

Kroll, Walters and Le (2007) examine the impact of board composition and TMT ownership on long-term IPO performance in young entrepreneurial firms in the US. Their sample includes 524 IPOs over 1996 and 1997. Their dependent variable is 24 month holding period return (HPR). Their control variables are underwriter prestige, TMT human capital, venture capitalist board members and their ownership, prior performance, TMT size, industry adjusted market-to-book ratio, firm size, year of IPO listing, industry average holding period returns, original TMT board members and their ownership, support specialist board members, advice and counsel business expert board members, and monitoring business expert board members. They find that TMT board ownership and TMT common stock holdings are positively associated with long-term IPO performance. They suggest the board of a young firm that has recently gone public is best comprised of a majority of original TMT members rather than independent outsiders.

Nikbakht, Shahrokhi and Martin Jr (2007) examine the relationship between executive compensation and IPO pricing in US. Their sample consists of 51 stocks from NYSE and 45 from NASDAQ. Their dependent variable is percentage of underpricing, which they investigate through logistic and multiple regressions with four control variables, viz percentage of CEO ownership, CEO salary, CEO bonus, and number of CEO options. They find that CEO salary and CEO ownership are positively related with IPO pricing in a three month time period.

Hartzell, Kallberg and Liu (2008) select a sample of 200 Real Estate Investment Trusts (REITs) for the period 1991 to 1998. They examine the relationship between returns of IPOs and corporate governance. They find that REITs with stronger corporate governance structures have higher initial IPO valuations and also outperform their peers in the long-term.

Kor, Mahoney and Watson (2008) examine how differences in demand, competition and technological uncertainty in the industry influence the level of monitoring of IPO firms by boards of outsiders and institutional investors. They selected 84 US IPO firms from 24 industries for 1995. They use the percentage of institutional ownership in the IPO firm and the outsiders on the IPO firm board as the dependent variables and then apply the variables to the regressions with other control variables, viz demand uncertainty, competitive uncertainty, technological uncertainty, ratio of board outsiders, percentage of institutional ownership, percentage of management bonus, percentage of management ownership, firm size, management age, firm age, number of risk factors, profitability, and market capitalization. Their results indicate that industry effects on IPO firms' board monitoring and institutional investor ownership are strongest in industries characterised by demand and competitive uncertainty.

The relationship of venture capital and IPO with corporate governance has also been examined by researchers in the US. Bouresli, Davidson III and Abdulsalam (2002) examine the relationship between venture capital and IPO corporate governance. Their sample consists of four years data of 293 IPOs from the NASDAQ and NYSE from 1995 to 1998, of VC backed and non-VC backed IPOs. They compare the percentage of outsider blockholder ownership, VC ownership, CEO ownership, and directors and officers' ownership of the VC backed and non-VC backed IPO ownership. They also compare the percentage of insiders, outsiders, affiliated, venture capitalist board members and board size. They find that insiders control fewer board seats when there is VC backing before and after IPOs. They also find CEOs of venture capital backed firms own a low percentage of stocks and VC financing is associated with a more independent governance structure.

Engel, Gordon and Hayes (2002) examine the relationship between firms' corporate governance decisions and managerial performance. Their sample consists of 464 IPOs post-listing on the NASDAQ from 1996 to 1999, which included 173 internet IPOs, 91 manufacturing IPOs, and 157 technology IPOs. Their dependent variables are log of CEO compensation, log of total compensation, log of total cash compensation, log of total stock compensation, and CEO turnover. They apply those variables individually to the logistic regressions with several control variables, viz dummy of technology or manufacturing industry, accounting performance, stock returns, log of market value, CEO tenure, dummy of CEO founder, CEO age, firm age, dummy for a new CEO in the IPO year, dummy of zero cash policy, percentage of CEO ownership, standard deviation of monthly stock returns, fixed assets over total assets, research and development expenses over total assets, and book-to-market ratio. Their results indicate accounting based measures are positively related to pay for non-internet industries, and stock returns are positively related to pay for internet

industries. They also find that compensation grants of low venture capital IPOs are more significantly associated with accounting and stock performance than high VC IPOs.

Carpenter, Pollock and Leary (2003) examine the relationship between governance mechanisms and firm internationalization of high technology IPO firms. Their sample consists of 73 firms post-listed from 1990 to 1999 in the US. Their dependent variables are internationalization prior and after IPOs, which are calculated by foreign sales over total sales. They apply the variables to the OLS with several independent variables, viz global strategic intent, firm age, number of employees, net income, percentage of outsiders' holding, board size, top management size, dummy of VC backing, percentage of TMT holdings prior to IPO, VC international experience, TMT international experience, and board international experience. They find that high technology IPO firms are less likely to have extensive global sales when they are VC backed. But VCs are indeed risk seeking when VC backing is complemented by the international experience of TMT and board.

Campbell and Frye (2009) examine the relationship between monitoring and VC and governance. Their sample includes 437 IPOs from 1993 and 444 IPOs from 1996, the governance data are two years and four years after offering. They delete the data of delisted IPOs after two or four years. Their dependent variables are monitoring indices of VC backed and non-VC backed firms, which are measured by the percentage of monitoring directors. Their control variables include dummy of VC backed, dummy of founder, size, risk, tangible assets, growth opportunities, firm age, industry adjusted Q, corporate control activity, and leverage. Their results indicate that in a very short time, high quality VC backed firms have higher levels of monitoring at the time of IPO over those low quality VC backed firms, and

while VC backed firms decrease monitoring after the IPO, non-VC backed firms increase monitoring after the IPO.

There are also several papers based on other markets, viz European countries, Australia and Canada. Balatbat, Taylor and Walter (2004) examine the relationship between the operating performance of Australian IPOs and corporate governance. Their sample consists of 313 IPOs from 1976 to 1993 for a five year post-listing period. Their data is annual. They use profit before interest and tax, divided by total asset of IPO firm, less the profit before interest and tax, divided by total asset of control firm (AOR) as the dependent variable and apply it to the regression with several control variables, viz share ownership, percentage of outside directors, CEO duality, percentage of institutional ownership, dummy of blockholders existence, number of years of operating, percentage of retained ownership, total liabilities over total assets, and percentage of tangible assets to total assets. And then they use share ownership and AOR as the dependent variable of regression of a two stage regression. Their results indicate that IPO performance is significantly positively associated with insider ownership in years four and five, but not in the first three years. They find a positive relationship between institutional ownership and IPO performance in five years' time, and also a positive relationship between CEO duality and IPO performance. But they find board composition has no impact on IPO performance, which is not same as other researchers' findings.

Audretsch and Lehmann (2005) examine the effects of experience, ownership and knowledge on IPO survival in Germany. Their sample consists of 341 post-listed IPOs on the Neuer Markt from 1997 to 2002, which includes 74 delisted IPOs. Their dependent variable is hazard rate, and control variables are firm age, number of employees before and after IPO,

growth rate, percentage of executive ownership, percentage of board ownership, percentage of friend and family ownership, percentage of venture capitalist ownership, percentage of human capital ownership, firm patents, CEO patents, executives' education, and human capital executives. They indicate executive ownership has no influence on firm survival when introducing measurements of human capital and intellectual property rights.

Roosenboom and van der Goot (2005) examine whether ownership and control variables influence market valuation at the time of IPO in Holland from 1984 to 2001. Their sample includes 118 IPOs on Euronext Amsterdam. They use first day market-to-book ratio of equity as the dependent variable, and apply the dependent variable to the regression with several independent variables, viz price to book ratio, price to sales, IPO proceeds, percentage of managerial ownership, percentage of managerial ownership square, dummy of share certificates, dummy of priority shares, dummy of preference shares, dummy of voting caps, percentage of independent directors, dummy of large shareholder monitoring, total assets, percentage of sales growth, return on sales, percentage of stock market conditions, dummy of technology industry, dummy of manufacturing industry. Their results indicate sales growth, return on sales before IPO, managerial ownership, percentage of independent directors, and large outside monitoring are positively related to IPO firm value, and they also may reduce agency costs. If agency costs are increased, they will reduce the price of IPOs that outside investors are willing to pay.

Roosenboom and van der Goot (2006) also examine samples of IPO firms in Holland from 1985 to 2000; they find that the returns to ownership decrease after the IPO. Their dependent variable is option grants and their independent variables are market to book ratio, profit growth, cumulative stock return, retained ownership, VC monitoring, independent board

monitoring, number of takeover defences, cash per employee, pay-out ratio, sales per employee, after year-1992 dummy, volatility, IT industry dummy, and log of number of employees. Their initial sample includes 126 companies; but some IPOs were without options and some data are missing so there are 54 remaining IPOs examined. Their results indicate there is a robust relationship between option grants and market and accounting returns. Their results also indicate that employees are more willing to be compensated by options when the company has outperformed its historical performance. The granting of options is more common when employees are of greatest benefit to the firm, such as when the labour market is tight.

Chahine (2007) examines a sample of 163 of a total of 355 French firms' IPOs from 1996 to 2000. He finds that block ownership is negatively associated with firm performance in the first year. Family ownership level has a non-linear relationship with first year BHAR. It is positively associated with returns when the percentage of family ownership is small, but it is negatively associated with returns when the percentage of family ownership is large. Chahine and Filatotchev (2008) examine the effect of information disclosure and corporate governance on IPO performance in France. Their sample consists of 140 French IPOs during the period 1996 to 2000. They use log of adjusted price-to-book ratio, log of adjusted price-to-sales ratio, first day abnormal return, and the closing price at one year, two year and three year periods as the dependent variables. They then investigate those variables into OLS individually with several control variables, viz information index, board independence, dummy of comparable firm, log of age, log of sales revenue, dummy of high technology industry, percentage of manager ownership, dummy of market, underwriter reputation, and percentage of VC ownership. They find that board independence has a positive effect on the IPO offer price and also reduces the underpricing and agency cost. They also indicate

information disclosure leads to a U-shape relationship with IPO discount; and information disclosure may damage the firm's competitive advantage.

Goergen and Renneboog (2007) examine the relationship between ownership and long-term IPO performance in UK and Germany. They select 62 samples of UK IPOs and match by size and industry with German IPOs from 1981 to 1988, and extend six years' IPO performance until 1994. Their dependent variables are 1, 2, 3, 4, 5, and 6 years IPO operating performance, and their control variables are operating performance of present year, initial shareholders' vote right, the type of largest shareholder in present year, dummy of countries listed, and family, domestic, foreign, bank and investor ownership. Their results indicate that post-IPO evolution of control in German and UK IPOs differs significantly, but with no significant change in the long-term operating performance, and they also find long-term IPO performance cannot be explained by agency conflict.

Bedard, Coulombe and Courteau (2008) examine the relationship between audit committees and IPO in Quebec, Canada. Their sample consists of 246 firms that had post-listed on the Toronto Stock Exchange during the period 1982 to 2002. Their dependent variables are underpricing of IPO and the percentage of forecast error. They then investigate those variables through the regression individually with several control variables, viz dummy of audit committee existence, dummy of whether audit committee is independent and competent, board size, CEO duality, percentage of pre-IPO stock return, underwriter reputation, dummy of major international audit firm remaining, firm age, financial leverage, the number of risk factors listed in the prospectus, IPO price, dummy of IPO unit offering, pre IPO total assets, tax deduction, dummy of year listing, dummy of the prospectus including an earnings forecast, average revenue growth in three years, dummy of audited forecast, time of forecast,

and number of assumptions on the earning forecast. Their results indicate that independent and experienced audit committees significantly decrease the level of underpricing of the IPO, with no significant effects of audit committee presence or characteristics on management forecast precision. They also indicate that an independent and competent audit committee is a cost effective way to reduce the underwriting cost, rather than hiring a big four audit firm. This is different from the results in China.

Krishnan, Ivanov, Masulis, and Singh (2011) examine the relationship between VC firm's reputation and the long-term performance of IPOs in United States. VC reputation is measured by past market share of VC-backed IPOs, and the sample includes IPOs listed from 1993 to 2004. They observe that the VC reputation has a positive relationship with long-term IPO performance.

Yu (2011) examines the relationship between corporate governance and stock price informativeness in 22 developed countries. Yu selects 5744 observations from 2002 to 2005. He employs regression and robustness tests and determines that a firm's corporate governance rating is positively related to the stock price informativeness. The rating of audit practices is positively related to the stock return-earnings.

Switzer and Bourdon (2011) examine the relationship between management quality and IPO operating performance in Canada. The sample covers 95 non-foreign IPOs listed from 1996 to 2006. They indicate that the operating performance is positively related to the management team's tenure, size, and the inclusion of chartered accountants. They also indicate that MBAs are negatively related to the operating performance.

2.4.2 Summary of IPO Performance & Corporate Governance Studies in Developed Markets

Corporate governance highly affects IPO performance in developed markets. According to Ritter (1991), the initial return of an IPO is very high, which means investors are over optimistic about young IPO firms' earning potential in the US. Hartzell, Kallberg and Liu (2008) also indicate REITs with stronger corporate governance structures have higher initial IPO valuations and also outperform their peers in the long term in the US.

CEO characteristics play an important role in explaining IPO performance. According to Engel, Gordon and Hayes (2002) and Nikbakht, Shahrokhi and Martin Jr (2007), TMT pay is positively related to stock returns, accounting based measures, and short-term IPO performance in the US. Dempere (2007) indicates that CEO duality has a negative relationship with long-term IPO performance in the US. But Balatbat, Taylor and Walter (2004) indicate that CEO duality is positively associated with long-term IPO performance in Australia. Audretsch and Lehmann (2005) indicate managerial ownership has no influence on firm survival when introducing measurements of human capital and intellectual property rights in Germany.

Board characteristics also play an important role in explaining IPO performance. According to Roosenboom and van der Goot (2005), outside directors are positively related to IPO firm value in Holland. Dempere (2007) also indicates that outside directors have a positive relationship with short-term IPO performance, but a negative relationship with long-term IPO performance in the US. Directors' knowledge and experience has a positive relationship with long-term IPO performance. However, Daily, Certo and Dalton (2005) provide some different results; they indicate that board composition, board size, and board prestige have no

effect on IPO offer price in high technology industry in the US. Balatbat, Taylor and Walter (2004) also indicate board composition has no impact on IPO performance in Australia. Board independence has a positive effect on the IPO offer price.

Ownership characteristics also play an important role in explaining IPO performance. According to Brau and Osteryoung (2001), ownership and governance variables are the best determinants to explain the success of micro IPOs in the US. According to Kroll, Walters and Le (2007) and Nikbakht, Shahrokhi and Martin Jr (2007), managerial ownership is positively associated with long- and short-term IPO performance in the US. Balatbat, Taylor and Walter (2004) support their result, finding that insider ownership and institutional ownership are positively associated with long-term IPO performance in Australia. Roosenboom and van der Goot (2005) also indicate that managerial ownership is positively related to IPO firm value in Holland. But Dempere (2007) indicates insider ownership has a negative relationship with long-term IPO performance. Chahine (2007) finds that block ownership is negatively associated with firm performance in the short term, and family ownership level has a non-linear relationship with first year short-term IPO performance in France. These findings conflict with results in developing markets. However, rules and regulations are different. For example, Asian countries have concentrated ownership whereas most Western countries have dispersed ownership.

Audit characteristics have also been used to explain IPO performance. According to Jain and Martin Jr (2005), investment in a high quality audit leads to a significantly lower post-IPO failure rate, and the association between audit quality and post-IPO survival is stronger when investment bank prestige is low in the US. Bedard, Coulombe and Courteau (2008) indicate that an independent and experienced audit committee significantly decreases the level of

underpricing of the IPO, and find no significant effect of audit committee presence or characteristics on management forecast precision in Canada.

Some accounting variables and the participation of VC have been used to test IPO performance. According to Dempere (2007), firm age and firm size have a positive relationship with short-term IPO performance. Nominating committee independence has a positive relationship with long-term IPO performance, and underwriter reputation has a negative relationship with long-term IPO performance in the US bank industry. But Daily, Certo and Dalton (2005) indicate VC equity, firm size, firm age, and firm return are related to either IPO offer price spread or IPO offer price in high technology industry in the US. Roosenboom and van der Goot (2005) indicate sales growth and return on sales before IPO are positively related to IPO firm value in Holland. Bouresli, Davidson III and Abdulsalam (2002) indicate insiders control fewer board seats when there is VC backing before and after IPOs. They also find that CEOs of VC backed firms own low percentage of stocks, and VC financing is associated with a more independent governance structure in the US. Engel, Gordon and Hayes (2002) find that compensation grants of low VC IPOs are significantly associated with accounting and stock performance than high VC IPOs in the US.

2.4.3 IPO Performance & Corporate Governance Studies in Developing Markets

There are also several papers that examine the relationship between IPO performance and corporate governance in developing stock markets, especially China and Taiwan. Chen and Kao (2005) test the conflict between agency theory and corporate control on managerial ownership in the Taiwan Stock Market. They collected 133 IPOs listed on the Taiwan Stock Exchange between 1992 and 1999. Firstly they have two dependent variables, viz IPO performance with initial return and without initial return. They apply those variables to the

regressions with several independent variables, viz level change of ownership of board of directors, percentage change of ownership of board of directors, level change of institutional ownership, percentage change of institutional ownership, industry change of ownership, auditor reputation, underwriter prestige, size risk premium, book to market risk premium, factor mimicking portfolio, and return on assets. And then they use the above control variables with two other variables; firm age and initial return, to test dependent variable stock performance. Their results indicate that increasing managerial ownership decreases stock performance, and that the corporate control effect dominates the agency effect or signalling effect of managerial ownership.

Yang and Sheu (2006) examine the relationship between managerial ownership and IPO survivability. They select 522 survivors and 38 delisted post-listed IPOs from the Taiwan Stock Exchange Corporation and the Over–The-Counter (OTC) Securities Exchange from 1992 to 2000, and each IPO is tracked until 2003. Their dependent variable is number of months an IPO traded; they investigate the variable by OLS with several control variables, viz dummy of censor, percentage of insider ownership, top offer to insider holding ratio, ratio of director to insider holding ratio, blockholder to insider holding ratio, firm age, first day initial return, size of IPO, IPO activity in given quarter, market level, and industry dummy. Their results indicate the likelihood of IPO survival first decreases and then increases with the percentage of insider ownership at the offering time, forming a U-shaped relationship. They also suggest increased insider ownership, especially top officers, will help to reduce agency cost and improve the IPO survivability.

Chahine and Tohme (2009) test the existence and behaviour of IPO performance in the context of emerging markets of 12 Arab countries in the Middle East and North Africa. They

select 127 IPOs from those countries over the period 2000-2007. They select several firms, offering, underwriter, and market characteristics to be the control variables, viz CEO ownership, log of total asset, log of firm age, privatization dummy, Gulf Cooperation Council (GCC) dummy, hi-tech dummy, participation ratio, dilution factor, over subscription rate, listing lag, underwriter reputation, market return, bubble dummy, dual structure dummy, strategic ownership, foreign strategic dummy, and domestic strategic dummy. They use OLS to examine the effect of those corporate governance control variables on the dependent variables log of IPO underpricing. Their results indicate that IPO underpricing is lower with increases to both CEO duality and strategic shareholder ownership.

There are a number of papers, mostly written by domestic researchers, examining the relationship between corporate governance and firm performance for companies listed on the Chinese stock market. Gu (2003) selects a sample of 68 companies of IPOs in 1994, which were traded on the SHSE, and then applies percentage of SOEs and issue year revenue to the regression to explain the dependent variables, viz short- and long-term performance. Gu indicates that Chinese IPOs of 1994 demonstrate extremely high short-term returns, which are caused by the lack of alternative investment opportunities, the bandwagon effect, and the agency problem. And the returns decrease over time and long-term performance is poor. The results also indicate SOE is significantly negatively connected to the first day return and firm size is positively connected to the first day return. The IPOs in China are systematically underpriced.

Wang (2005) examines the changes in operating performance of Chinese listed companies with IPOs between 1994 and 1999. Their sample includes a total of 747 firms; 369 of them from SHSE and 378 of them from SZSE. He uses return on assets, percentage of SOE,

percentage of legal person shares, percentage of individual shares, percentage of concentration of ownership (top 10 largest shareholdings), percentage of non-SOE concentration, size, and leverage, to explain operating performance measure by three different dependent variables, viz return on assets, operating income to assets, and sales to assets. He chooses percentage of the state, legal and individual shares as the dependent variables separately, trying to explain those variables by some of the control variables. He separately tests the explanatory of power of control variables by choosing percentage of concentration of ownership and non-state ownership concentration as the dependent variables. He finds a decline in operating performance of Chinese IPOs. His results indicate neither state ownership nor concentration of ownership are associated with performance changes, but there is a curvilinear relationship between legal person shareholding and operating performance and between concentration of non-state ownership and operating performance. Wang suggests the reason maybe Chinese stock markets are emerging markets and the external governances are weak, so the managers can focus on their own interest and the controlling shareholders have the opportunity to take the benefits from the non-controlling shareholders.

Fan, Wong and Zhang (2007) select 790 new listed A-Share IPO companies (73% of IPO firms in China) on the SHSE and SZSE from 1993 to 2001. They use long and short-term CAR, change in return on sales, growth in sales, and growth in earnings as the dependent variables of post-IPO performance, and then measure those variables by the regression with other independent variables, viz whether CEO is politically connected, percentage of largest shareholder's ownership, market-to-book ratio, leverage, log of total assets, and regulated industry. Their CEO and board characteristics also include CEO age, gender, education, professional background, employment history; board size, number of manager directors,

politically connected directors, professional directors, directors with law, accounting or finance backgrounds, directors with unaffiliated business experience, directors with an academic background, female directors, and director age. Their results indicate a CEO's political ties are negatively associated with post-IPO returns, earning growth, sales growth and change in returns on sales, because politically connected CEOs are more likely to have boards populated by current or former government bureaucrats rather than professionals.

Li and Naughton (2007) examine the relationship between board characteristics and aftermarket performance of IPOs in the Chinese market. They use 314 samples of listed companies from 1999 to 2001 to test the long- and short-term performance of those companies. Their hypotheses are that board independency is negatively related to IPO underpricing and positively related to IPO long-term performance; the separation of CEO and chairperson is negatively related to IPO underpricing and positively related to IPO long-term performance; the level of board size is negatively related to IPO underpricing and positively related to IPO long-term performance. They use short and long-term performance as the dependent variables in separate ordinary linear regressions, and examine the dependent variables by some independent variables, viz board composition, leadership structure dummy, board size, year of issue dummy, firm size, ballot rate ratio, offer size, legal person ownership, tradable A-shares ownership, and industry dummy. They find that board size is positively associated with under-pricing in the short term, and the degree of CEO duality is positively associated with aftermarket performance in the longer term. Their results indicate that board characteristic variables do have some explanatory power on IPO aftermarket performance so there is an increasing level of maturity in the Chinese market.

Chi, Wang and Young (2010) test the three years' outperformance of Chinese IPOs. Chi et al. select 897 A-Share IPOs from 1996 to 2002 on the SHSE and SZSE. Cross-sectional study finds that reducing of SOE ownership reduces the IPOs attractiveness in the long run. Cheung, Stouraitis and Tan (2010) examine the relationship between the quality of corporate governance and firm valuation/risk in Hong Kong, using 168, 168, and 174 companies respectively in 2002, 2004, and 2005. They indicate that family firms and firms with concentrated ownership structures are associated with bad governance and note that the quality of corporate governance is very important in terms of explaining future stock return and risk.

2.4.4 Summary of IPO Performance & Corporate Governance Studies in Developing Markets

Corporate governance highly affects IPO performance in developing markets. CEO characteristics play an important role in explaining IPO performance. According to Fan, Wang and Zhang (2007), CEOs' political ties are negatively associated with post IPO returns and other accounting characteristics, because politically connected CEOs are more likely to have boards populated by current or former government bureaucrats rather than professionals in China. Li and Naughton (2007) find that CEO duality is positively associated with long-term IPO performance in China. Chahine and Tohme (2009) indicate CEO duality is negatively related with short-term IPO underpricing in Arabian countries.

Board characteristics also play an important role in explaining IPO performance. Li and Naughton (2007) find that board size is positively associated with under-pricing in the short term. Their results indicate board characteristics variables do have some explanatory power on IPO aftermarket performance in the Chinese market.

Ownership characteristics also play an important role in explaining IPO performance. Gu (2003) indicates that state ownership is significantly negatively connected to short-term IPO performance in China. Chen and Kao (2005) indicate the increase of managerial ownership decreases the stock performance in Taiwan. Chen and Kao (2005) suggest increased insider ownership, especially top officers, will help to reduce agency cost and improve the IPO survivability in Taiwan. Wang (2005) indicates that neither SOE nor concentration of ownership are associated with performance changes, but there is a curvilinear relationship between legal person shareholding and operating performance, and between concentration of non-state ownership and operating performance in China. Yang and Sheu (2006) indicate that insider ownership first decreases and then increases the likelihood of IPO survival at the offering time, forming a U-shaped relationship in Taiwan. Chahine and Tohme (2009) indicate insider ownership is negatively related with IPO underpricing in Arabian countries.

Gu (2003) indicates that firm size is positively connected to short-term IPO performance in China. The IPOs in China are systematically underpriced; the return on Chinese IPO decreases over time and long-term performance is poor. Wang (2005) also finds a decline in operating performance of Chinese IPOs. Most previous literature tests the impaction of corporate governance on IPO and firm performance in one market, but this study offers a comparison between two Chinese stock markets, and even comparison between two countries.

2.5 Theories of Corporate Governance

Several theories of corporate governance have been promoted in the literature. In this section seven theories are briefly described and then reconciled with the empirical research discussed above. The list is not intended to be exhaustive but sufficient to form a bridge between the empirical research undertaken in this thesis and the more conceptual frameworks concerning corporate governance.

2.5.1 Agency Theory

Agency theory was original introduced by Jensen & Meckling (1976). Agency theory is one of the most important theories in corporate governance. Extant literature uses the agency theory viewpoint to investigate the relationship between provider of resources (shareholder or principal) and allocator of those resources (agent) in a company. According to the agency theory, the owner of the resource is the principal, and the person responsible for the use and control of the resources is the agent. In an owner-controlled company, the owner-manager owns all profits of the company. Under this situation, the agency problem does not exist. Agency costs arise when there is a separation of the principal and agent roles, and the agent will maximise his/her own benefit at the expense of the principal (Eisenhardt, 1989). According to Smith (1776), managers cannot be "expected" to manage other people's money like their own money. Jensen & Meckling (1976), argue that agency costs increase the monitoring expenditure by the principal, the bonding expenditure by the agent, and the residual loss.

This study investigates the performance of IPO firms from China and New Zealand. When management issues stocks publicly and absorbs the new resource from outside, it increases the probability of managers increasing on-the-job consumption, relaxing, and reducing work strength. Obviously, the behaviour of management will be significantly different with the change of the stock ownership. The debt issuance will also cause an agency problem.

According to Zahra & Filatotchev (2004), information asymmetry arises when a party has information but the counterparty does not. If the agent has more information than the principal, the information asymmetry may affect the efficiency of the monitoring and hurt the

benefits of the principal. The agent will search all possible opportunities to increase their own wealth.

In order to reduce the risk of agency problem and maximize their own interests, the principal will pay the supervision costs, such as external audit costs. On the other hand, compliance costs are necessary. The agent needs to set up the internal audit and allow the principal to fully understand the behaviour of the manager; such action can help the manager to consolidate their position and also maintain their salaries and benefits. According to Adams and Crocker (1991), the agent costs are reflected in the salaries of managers. Under self-serving consideration, the agent needs to set up the internal supervisions, like internal audit, to let the principal understand the effort level of managers, and reduce the risk of management compensation adjustment. According to Weisbach (1988), the independence of board is the key to efficient monitoring.

2.5.2 Stewardship Theory

Stewardship theory was investigated by Donaldson (1990) and Barney (1990). Stewardship theory reveals a relationship exists between the agent and principal from the opposite perspective of agency theory and provides a new way to solve corporate governance problems. According to stewardship theory, the assumptions of agency theory are not appropriate. Agents' dignity, faith, and job satisfaction will enable them to work hard, and the interests of agents and principals are consistent. Under stewardship theory, the core concept is that agents can be trusted to achieve the maximum interest of principals (Donaldson, 1990; Huse, 2007; Muth & Donaldson, 1998). The major difference between agency theory and stewardship theory is the hypothesis of human nature. Different hypotheses will inevitably

lead to governance structure and mechanism differences, and produce different theories of governance.

The research on stewardship theory includes four aspects. First, the analyses and hypotheses of agents' human nature by separate individualism, opportunism, self-interest "agents" with collective and trustable "housekeeper". Second, whether the management structure of the company, established by the independent directors, have external supervision or increased internal directors and created a fully trusted environment that provide adequate supervision. Third, whether the governance mechanism, introduces the control and material or non-material incentive-based compensation plans. Fourth, whether there is any relationship between the stewardship theory and the agency theory, and explain whether one theory outperforms another or both theories are relevant in explaining some cases. According to Caldwell & Karri (2005), stewardship theory is more appropriate compared to the agency theory in explaining the basic of the organization and long-term interest prospect.

2.5.3 Tournament Theory

Tournament theory was invented by Lazear & Rosen (1981). According to Lazear & Rosen (1981), tournament theory is used to describe certain situations where the salary differences are based not on productivity but upon relative differences of individuals. The theory has also been explored by many researchers (Bull, Schotter & Weigelt, 1987; Ehrenbreg & Bognanno, 1990; Knoeber & Thurman, 1994; Lazear, 1999).

The major incentive object of tournament theory is the CEO. According to tournament theory, the increasing salary gap between CEO and other senior management members will reduce monitoring costs for the principal, provide a strong incentive for the convergence of

interests between the principal and agent, and also improve firm performance. The theory promotes improved firm performance by meeting two conditions. First, the object (CEO) has certain management ability and guides the firm to achieve higher performance objectives. Second, the salary gap can stimulate the incentive of the object. There is a positive correlation between the enthusiasm of the object and salary gap.

2.5.4 Institutional Theory

Institutional theory investigates aspects of social structure. No matter what kind of policy system, the government authority is the public policy maker and implementer; various systems will inevitably affect the policy choice, content, and outcome. According to Scott (2004), institutional theory considers the processes by which structures, including rules, norms and routines, become established as authoritative guidelines for social behaviour.

Institutional theory provides the theoretical basis for system analysis; the system model has gradually become the main method of policy analysis. System analysis is not necessary to lead to a certain action. According to Scott (2004), institutional theory explores how these elements are created, diffused, adopted, adapted, and also declined and disused.

2.5.5 Stakeholder Theory

Stakeholder theory was investigated by Freeman (1984). Stakeholder theory refers to the comprehensive interests of all stakeholders, not just shareholders. Compared with the traditional maximum shareholder wealth theory, stakeholder theory proposes that a company cannot be separated from stakeholders' participation; the company is in the pursuit of the interests of all stakeholders, not only shareholders.

According to Freeman (1984), there are three groups of stakeholders. First, a person is holding stock, such as director, shareholder, or manager, is called an ownership stakeholder. Second, a person in a relevant group within or associated with the company, viz employee, creditor, consumer, competitor, supplier, local community, is known as an economically dependent stakeholder. Third, a person or party who has social interest, like a government agency, media or other special group, is called a social stakeholder.

2.5.6 Managerial Hegemony Theory

Managerial hegemony theory holds that the directors are appointed and dominated by management and that management has effective control of the board (Kosnik, 1987). According to Kosnik, the board's role is inefficiency with little contribution made to decision making. Prior studies find the monitoring of independent directors is passive and inefficient (Baysinger & Hoskisson, 1990; Baysinger, Kosnik & Turk, 1991), so the board is not a mechanism for aligning management and shareholder interests.

2.5.7 Resource Dependence Theory

Resource dependence theory was introduced by Pfeffer and Salancik (1978). Resource dependence theory notes the board of directors are important for establishing the relationship between the company and external environment, and to help obtain significant information, resource and legitimacy.   According to resource dependence theory, a company would like to establish interlocking director relationships with other companies. Resource dependence of director is the key reason for small and family firms' success (Daily & Dalton, 1994). In summary, seven theories in the corporate governance studies are discussed. All exploratory variables are selected regarding these theories.

Seven theories which bear directly on the corporate governance of IPOs are noted in Table 2.1 and discussed below. An IPO is a transition process from one ownership structure to another, and changes in governance practices need to be undertaken to respect the new ownership requirements and new commercial and social contexts. The columns show the theories where the variables have been tied to an explicit theory. None of these variables are inconsistent with an agency theory approach.

Table 2.2 Comparison of Theoretical Perspectives on Variables

Variables	AT	ST	TT	IT	STT	MHT	RDT
CEO Age				Yes			
CEO Gender				Yes			
CEO Qualification				Yes		Yes	
CEO Experience		Yes	Yes			Yes	
CEO Salary	Yes	Yes	Yes		Yes		
Top managers' salaries	Yes	Yes	Yes		Yes		
CEO Duality		Yes			Yes	Yes	
Chairman Experience		Yes		Yes		Yes	Yes
Chairman Qualification				Yes		Yes	Yes
Number of Directors					Yes	Yes	Yes
Independent Director Percentage	Yes				Yes	Yes	Yes
Female Director Number				Yes	Yes		Yes
Number of Supervisors	Yes				Yes	Yes	Yes
Board Meetings per Year	Yes				Yes		
Supervisor Meetings per Year	Yes				Yes		
Block Shareholding					Yes		
Management Shareholding					Yes		
State Owned Shareholding				Yes	Yes		
Legal Person Shareholding				Yes	Yes		
Inside Shareholding					Yes		
Non-trading Shareholding					Yes		
Largest Shareholding					Yes		
Committees	Yes				Yes		
Size					Yes		
Beta					Yes		
Labour					Yes		

Note: AT, ST, TT, IT, STT, MHT and RDT, indicate agency theory, stewardship theory, tournament theory, institutional theory, stakeholder theory, managerial hegemony theory, and resource dependence theory, respectively.

2.6 Supervisory Board Studies

China differs from New Zealand, in that China has supervisory boards as part of the corporate governance structure. These are explained more fully in section 5.5.2 below. These boards are not unique to China and are present in Europe, in France and Germany for example, and also in Japan.

This model of co-determination models endeavours to include all parties related to improving company performance. They include employees, customers other stakeholders, as well as shareholders. Many prior studies have suggested that the key role of corporate governance is to meet all related parties' expectations and all related benefits shall be under consideration. (Freeman, 1983; Freeman, 1984; Cochran and Wartick, 1988; Thompson, Brown, Kay, and Titterington, 1991; Hill and Jones, 1992; Clarkson, 1994; Monks and Minow, 1995; Donaldson and Preston, 1995).

According to Renaud (1875), the supervisory board is responsible for monitoring the implementation of the board's decisions while staying independent from the board of directors. Schumacher (1937) observes that the supervisory boards represent the interests of small and medium shareholders in Germany. Simon & Winfried (2000) examine 500 public firms in Germany, finding that the supervisory board should include external supervisors, not just representatives of shareholders, banks, and related parties.

The Chinese supervisory board role and impact has been considered in prior governance studies (Li and Wang, 2004; Li and Wang, 2005; Wang and Liu, 2006). Gao and Luo (2004) indicates that the supervisory boards represent the benefits of small- and medium-shareholders' litigation in China. Xiao, Dahya, and Lin (2004) interview the directors and

supervisors of 21 listed firms. He finds that the supervisory board is very important for overseeing the financial condition and monitoring management and the board of directors. According to Li and Wang (2005), the supervisory board's contribution to governance performance is negatively related to the larger shareholder ownership.

According to the Japanese Company Act 2002, the supervisory board is no longer necessary in the Japanese corporate governance system. If more than half of the independent directors agree, the board of directors may remove the supervisory board from the company. China maintains the requirement for both independent directors and a supervisory board as key components of the corporate governance system. Prior studies do not provide unanimous support for the status quo. Some researchers believe that the supervisory board should be removed. Yu and Ma (2000) indicate that the Chinese supervisory board is inefficient. They propose that the board of directors should be responsible for monitoring and decision making and the supervisory board should be removed. Shao (2003) shares a similar view, suggesting that independent directors, audit committee and other committees are more efficient than a supervisory board. Cao (2004) records that there are conflicts between supervisory boards and independent directors in China.

The alternative view that the supervisory board is legitimate, rational and complementary to the board is also widely expressed. Wang, Wang and Liu (2002) investigate the independent directors' system in the US and the supervisory board system in China. They encourage more strengthening of the supervisory board in China. Li and Wang (2005) also indicate the importance of strengthening supervisory boards. Wang and Liu (2006) believe that the independent directors and supervisory board have complementary advantages in the Chinese governance system. He (2001) and Wen, Xu and Jiang (2003) also support the

complementary relationship of independent directors and supervisory boards in China. The current study investigates the influence of supervisory board in IPOs on the Chinese stock exchanges.

2.7 Conclusion

Prior research emphasises the difference between emerging and developed markets, and the impact that scale, culture, legal framework and political systems have upon the performance of listed stocks. IPOs as a subset have not been the focus of such attention. This study will address this gap through considering use of a wide range of governance variables, the analysis is broader than prior work and provides greater confidence in the findings. The study adds to the understanding of how different forms of governance impact the short and long-term IPO performance. Secondly, most prior studies test either short-term or long-term IPO performance over a specific period. The current study tests the yearly long-term sustainable IPO performance, for periods up to 11. Thirdly, earlier works have focused on large and developed economies, viz United States, United Kingdom, other European nations, Australia, and Japan. This study provides evidence from China and New Zealand. Fourthly, most previous literature tests the impaction of corporate governance on IPO and firm performance in one market, but this study offers a comparison between two Chinese stock markets, and even comparisons between two countries. Fifth, the merits of the Chinese supervisory board system are reflected in differing views in prior studies. This thesis provides new evidence on the long-term IPO performance for SHSE and SZSE.

CHAPTER 3 BACKGROUND TO THE CHINESE STOCK EXCHANGES

3.1 Introduction

The previous chapter presented the literature on corporate governance and IPO performance. Chapter 3 covers Ming & Qing Dynasty history, the introduction of the Qing Dynasty stock market and Hong Kong stock history, the introduction of the Shenzhen, Shanghai and Hong Kong stock exchanges, and the relationship between Chinese and international stock markets. This chapter will also cover the introduction of A, B, H, S, N and red chip classes of shares.

3.2 Introduction of the Ming & Qing Dynasty History

China's stock history can be traced back to the Warring States period 2000 years ago. For the early modern age, China's stock history can be traced back to the 16th century, at the end of the Ming Dynasty. Zhu Yuanzhang led a rebellion against Mongol rule (Mote and Denis, 1998) and founded his kingdom, the Ming Dynasty in 1368. His reign is considered one of China's golden ages (Li & Zheng, 2001). During the Ming Dynasty, many industries financed themselves through private capital, replacing capital managed by the state. At the same time, foreign trade had started to open up and connections were being made between East and West. Between 1405 and 1433, the Ming government sponsored seven naval expeditions. The Yongle Emperor designed the expeditions to establish a Chinese presence, impose imperial control over trade, impress foreign people and extend the Ming's tributary system (Deng, 2005). Towards the end of the Ming Dynasty, high risk industries that required relatively large capital, but generated high profit, such as the sand industry in Shanghai, the salt industry in Sichuan, mining in Yunnan and Guangdong and the finance industry in Shanxi, were all operating using a "fund raising partnership" business form.

China's last imperial dynasty, the Qing Dynasty, was founded by the Manchus who had been subjects of the Ming and had earlier founded the Jurchen Jin Dynasty (Spence, 1990). When farmer rebel forces rebelled in Beijing and the last Ming Emperor committed suicide when the city fell in 1644, the Manchu Qing Dynasty seized control of Beijing. After taking over the capital of the Ming Dynasty, it wasn't long – just a few decades – before Qing took control of the whole of China in 1863 (Wakeman, 1985). By the end of the 17th century the Chinese economy had recovered from the devastation caused by previous wars and the resulting breakdown of order. The Qing economy significantly developed and markets continued to expand during the 18th century, but it failed to keep pace with the economies of European countries in the Industrial Revolution (Li & Zheng, 2001).

3.3 Introduction of Qing Dynasty Stock History

Before the opium trade, Qing enjoyed a favourable balance of trade with Britain. Qing's major foreign trade products included tea, china, and silk fabric. From the 17th century to the 19th century, 48 tons of silver was transferred to China by Europeans through foreign trade surpluses (Song, 2011). Because of the trading deficit, annual silver circulation in Europe decreased by 50% from 1649 to 1694. In 1816, Britain established the Golden Standard financial system. At the same time, the Qing Dynasty had the biggest Silver Standard financial system in the world.

From 1790 to 1838, 400,000 units of opium were smuggled to Qing by the East India Company, valued at 230 million taels silver[4]. From 1781 to 1850, the national silver treasury of Qing decreased from 70 million taels to 8 million taels. After the First Opium War in 1840, the Qing Dynasty opened up Guangzhou, Xiamen, Fuzhou, Ningbo, and Shanghai as the trading ports for foreigners; and then the government allowed foreign banks to enter China

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[4] In 1840, 1 British Pound = 5 Taels Silver. In 1920, 1British Pound = 10 Taels Silver. According to purchasing power parity, 1 Tael Silver in 1840 = 200 Chinese Yuans or 40 New Zealand Dollars in 2010.

and start doing business. Foreign investment helped to establish all kinds of joint stock companies in China, and introduced new methods of production management and stock financing that had generally been adopted by Western counties. The Hong Kong and Shanghai Banking Corporation (HSBC) had been established by Thomas Sutherland in Hong Kong in 1864. Major shareholders included Messrs Sassoon Sons & Corporation, Messrs Dent & Corporation, and Messrs Aug Heard & Corporation. HSBC was the first western bank to establish its headquarters in China. According to Ma (2007), HSBC attracted many rich and loyal customers. For the long-term saving service, there were five accounts with more than 20 million taels silver in savings, 20 accounts with more than 15 million taels silver savings, and 130 accounts with more than 10 million. In 1872, HSBC became the settlement bank for all foreign banks in Qing, and became the "Chinese Bank of England" (Song, 2011).

As the Qing Dynasty began its economic reforms, shareholding systems started to be introduced rapidly. With the difficult financial situation, the government relied on private capital to bolster national resources, and built a few private and state owned joint capital Chinese modern civil enterprises. In 1872, the Minister of Commerce Li Hongzhang was planning and constructing the Shanghai Ship Investment Promotion Bureau. Following the shipping industry, joint stock companies became more common - in insurance, mining, textile, and communication industries. From the early 1880s, Qing set up 15 mining enterprises, and all of them issued stock. This period is known as the "Westernization Movement" reform.

The formation of the foreign concession areas in Shanghai was the result of the Treaty of Nanking of 1842 and subsequent agreements between the Qing Dynasty and Britain were crucial to the development of foreign trade in China and the foreign community in Shanghai.

Private Stock trading was born. According to historical records, there were some stock transaction activities between foreign business people in Shanghai before 1861. When the colonial economy became prosperous after the 1860s, foreign stock trading became very active in Shanghai. Stock trading needs also led to the rise of financial service companies. The first securities trading company was established by the British in 1869. In 1891 during the boom in mining shares, foreign businessmen founded the "Shanghai Share Brokers' Association" headquartered in Shanghai as China's first stock exchange, to trade enterprise stocks set up by foreigners in China. That was the forerunner of today's Shanghai Stock Exchange.

Domestic Chinese merchants started stock trading in the 1870s. At first, they had no clearing house and no corresponding trading rules. Most transfers were between relatives and friends, but the transaction prices were considered by the foreign securities market. Later on, with the expansion of stock issuance and increasing numbers of investors, stock trading became a commercial requirement for local investors. The Shanghai Pingzhun Securities Trading Company was established in September 1882, and set the precedent for future Chinese-organised securities markets. The company also developed a distinct internal trading association and provided conveniences for stock trading. According to historical sources, mining industry market capitalization was three million taels silver, and industry turnover was ten million taels silver. But the stock market wealth dream was destroyed by the Sino-French War in 1883. During the war, French warships were placed in the Shanghai harbour, and the stock market fell immediately and many investors and banks were bankrupted.

The Chinese securities market entered its initial stage in 1895, the late stage of the Qing Dynasty. Qing had been defeated by the Japanese in 1895, resulting in the Treaty of

Shimonoseki; Qing paid two hundred million taels silver indemnity to Japan, financing it through the international financial market, the largest loan order of that time. Qing issued a large amount of government bonds, and that, plus the issuance of foreign funded enterprises meant the Shanghai stock market had been stimulated.

Compared with transactions before 1883, the domestic Chinese stock market was not particularly active in the 1880s. Along with the foreign capital banks, mining enterprises and railway enterprises set up in China, the scale of foreign capital stock issuance expanded even more in 1880s. At the same time, the Qing government promulgated a series of laws and regulations for commercial and industrial development, and adopted some measures to encourage the establishment of domestic banks and enterprises. It took the second economic reform of Chinese modernization after 1895, especially the development of banking and railway industries, for stock trading to gradually improve. After the state-owned Commercial Bank had been established in Shanghai in 1897, the Qing government also set up two state-private joint banks, known as the Bank of Great Qing and the Bank of Communication. In addition, there were also a number of local government-owned banks and private banks established in this period. Those new banks issued a large number of stocks and their stocks were very popular in the market. In 1903, the government advocated merchants establish railway companies and issued stock to raise capital for railway companies. Then 18 state-private joint and private railway companies were established between 1903 and 1907 and those companies issued a lot of railway stocks. From 1901 to 1911, Qing set up 386 new types of enterprises and domestic Chinese companies achieved fast development in manufacturing, electricity, mining, textile, banking and other industries. Then number of listings also greatly increased during the period.

The Shanghai Sharebrokers' Association was registered in Hong Kong in 1904, known as the Shanghai Securities Exchange, not only trading Chinese government bonds, but also involving the stocks of foreign companies that were registered in China and the Far East; rubber stocks all over the Southeast Asia and municipal bonds of Shanghai City Hall, which ultimately led to the bull market in the years 1908-1909. The office used membership based rules; only members could participate in securities trading. Members included 87 Western businessmen and 13 Chinese businessmen. In 1909, the USA was running into the automobile age and the rubber industry of Southeast Asia became attrition to global investment. The Shanghai Securities market became the preferable financing place with nearly one third of Southeast Asian rubber enterprises choosing to list in Shanghai. Rubber enterprises absorbed 40 million taels silver of domestic Chinese funds, equalling nearly half of the Qing Dynasty government's annual income. Even many private banks lowered their loan threshold, provided credit loans to speculators, and accepted stock collateral loans. A more serious problem was that some private banks used their credit advantage, issued their own bank cheques (equate to printing the notes), and became directly involved in stock speculation. Many private and state-owned investments through banks were absorbed into Shanghai, and the Shanghai stock market became like a national gambling casino, or perhaps a Mah-jong table. Whether state-owned, foreign, or state-private joint ownership enterprises, no investor paid attention to business management, financial status and other basic information about the enterprises. Investors traded stocks in a similar vein to playing gambling games.

In March 1910, the rubber industry stock prices had risen up to 27 times their face value, institutional and foreign investors sold out at high price and absconded with the money. Many investors went bankrupt, more than 20 private banks closed down, and the market

panic caused much financial agitation. Later on, when the London stock market crashed, so too did the Shanghai stock market. Those banks which speculated also closed down. A more serious problem was that some banks misappropriated large repositories of state-owned capital; it even caused problems for the Qing Dynasty and their payment of reparations to Japan and other countries. Despite remedial action, more and more private banks fell over. The financial market was out of control and the collapse was a crucial reason behind the fall of the Qing Dynasty.

Overall, Chinese stocks and securities markets had experienced 40 years of infancy from the 1840s, and finally reached the initial stage in the late of 1890s. In China, the first modern stock was issued by foreigners, and the first stock trading was also between foreign businessmen. Later, domestic stock and stock trading appeared. Chinese securities markets began in two different market systems, one system created by foreigners, and the other created by locals.

In 1920 and 1921, the "Shanghai Securities Exchange" and "Shanghai Chinese Merchant Exchange" started operating. An amalgamation eventually took place in 1929, and the combined markets operated thereafter as the "Shanghai Stock Exchange". By the 1930s, Shanghai had emerged as the financial centre of the Far East, where all domestic and foreign investors could trade stocks, government bonds and futures. The operation of the Shanghai Stock Exchange came to an abrupt halt after Japan occupied the Shanghai International Settlement in 1941. In 1946, the Shanghai Stock Exchange resumed its operations before closing again three years later in 1949, after the Communist Party took Shanghai. When the Cultural Revolution ended, China re-opened to other countries in 1978.

3.4 Introduction of Hong Kong Stock History

Stock trading in Hong Kong can be traced back to the 1860s. British businessmen had established joint capital companies in Hong Kong, and they transferred their shares through private transaction via agents. The Hong Kong Brokers' Association was formally established in 1891, and renamed the Hong Kong Stock Exchange in 1914. For a start, it wasn't very active. When the Communist Party revolution took Shanghai in 1949, many brokers shifted capital and talent from Shanghai to Hong Kong. In the 1960s, only around sixty stocks had been listed on the HKEX. There were few brokers and very limited transactions. Stock trading began to pick up in the 1970s. The Far East Exchange, Gold and Silver Exchange, and Kowloon Stock Exchange were established in the 1970s and increased public participation. At that time, the minimum investment was Hong Kong Dollar (HKD) 10,000 and all transactions had to be through brokers. Brokerage commission was 0.75-1%; they also offered the margin trading service.

From 1962 to 1973, Hong Kong's annual GDP growth rate was 9.4%, and GDP increased from HKD 8.6 billion to HKD 23.1 billion. The Hang Seng Index was 107 points in early 1969, but had risen to 1,775 points by March 1973. There were a lot of IPOs listed on the Hong Kong Stock Exchange from 1971 to 1973, and after the listings prices increased more than 20 times the IPO price. At this time, the real estate industry was emerging in Hong Kong, which was responsible for the stock market bubble in 1973, but because of the Hong Kong stock market crash in the same year, the Hang Seng Index had fallen to 150 points by the end of 1974.

3.5 Introduction of the Shenzhen Stock Exchange

The earliest beginnings of the SZSE can be traced back to 1986. The Shenzhen Development Bank started the first security trading through its securities company counter. After the Shenzhen City Investment Securities and the Bank of China Securities Department opened, several companies also issued and traded stocks, and then the rudimentary form of SZSE was established.

In November 1989 Shenzhen City Hall made the decision to build up the SZSE and it was officially founded on 1 December, 1990. It formally opened for business on 3 July, 1991. The SZSE was regulated by the Shenzhen branch of the People's Bank of China. After 1 April, 1993, the SZSE was managed by the Shenzhen Securities Management Committee.

With SZSE trading gradually becoming active, the number of listed companies gradually increased. Because of the competition between the SZSE and the SHZE in the bull market in 1996, in 1997 the State Council decided to place the SZSE under the direct management of the China Securities Regulatory Commission. The SZSE management structure included a general manager and a deputy general manager of the exchange, appointed by the China Securities Regulatory Commission, and a chairman and a vice-chairman, nominated by the Commission.

The SZSE provides a centralized trading place for securities. It also organizes and supervises those securities trading under the direct supervision and management of the China Securities Regulatory Commission. Being committed to multi-level security market construction, the SZSE strives to create an open and fair market environment. The main functions of the exchange include developing the trading rules, arranging IPO listings, supervising IPO

listings, organizing and monitoring securities trading, supervising the investors and listed companies, administering and disclosing market information, and any other functions licensed by the China Securities Regulatory Commission.

In the early days of the SZSE, transactions were mainly computer transactions by accredited representatives in the exchange trading hall. Due to overcrowding in the trading hall, the SZSE has twice extended the building and set up more offices for transactions. In the early days, investors had to fill and submit their application forms at the local security companies' counters. Once the application was accepted, counter staff contacted the representatives in the trading hall by telephone. Representatives inputted the transaction requests to the exchange terminal, and then they reported the transactions to the counter staff. With this method of transmitting information there were a lot of mistakes, and those local security companies had to deal with these errors by setting up a special 'fault tolerant' account. Also, some representatives colluded with counter staff and took illegal advantages from investors. In order to solve these problems, the SZSE officially began to use a fully automated computer auction system and by February 1992 manual bidding was eliminated.

Table 3.1 Summary of the SZSE 1999-2010[5]

Year	1999	2000	2001	2002	2003	2004
Number of Listing Firms	463	514	508	508	505	536
New Listing Firms	50	51	0	0	0	31
Stock Market Capitalization (trillion RMB)	1.189	2.116	1.593	1.297	1.265	1.104
Stock Trading Volume (trillion RMB)	1.435	2.945	1.560	1.103	1.129	1.586
Investor Accounts (million accounts)	22.013	28.429	32.206	33.172	34.014	35.014
Capital Rising (billion RMB)	37.922	63.972	23.473	14.246	8.722	19.671
Number of Listing Stocks	504	557	550	551	548	578
Number of A-Shares	450	499	494	494	491	484
Number of B-Shares	54	58	56	57	57	56
Market P/E Ratio	36.300	56.040	39.790	36.970	36.190	24.630
Securities Investment Fund	16	18	25	29	29	30

Year	2005	2006	2007	2008	2009	2010
Number of Listing Firms	544	579	670	740	830	1169
New Listing Firms	8	35	91	70	90	339
Stock Market Capitalization (trillion RMB)	0.933	1.779	5.730	2.412	5.928	8.642
Stock Trading Volume (trillion RMB)	1.243	3.265	15.512	8.668	18.948	24.132
Investor Accounts (million accounts)	35.747	38.615	68.998	75.754	85.708	94.336
Capital Rising (billion RMB)	3.028	62.083	117.521	125.036	171.269	410.061
Number of Listing Stocks	586	621	712	782	872	1211
Number of A-Shares	481	464	455	454	455	473
Number of B-Shares	55	55	55	55	54	54
Market P/E Ratio	16.360	32.720	69.740	16.720	46.010	44.690
Securities Investment Fund	39	46	48	48	55	93

The number of listing firms and stocks increased between 1999 and 2010, especially after 2004.[6] According to Table 3.1, the SZSE market capitalization and trading volume were also increasing regarding the increased number of listed stocks and number of investors. The average P/E ratios were very high and indicated that investors were not rational. Overall, the SZSE was a very fast growing security market in the decade 1999-2010.

Supported by the development of the SHSE, the SZSE stopped issuing new shares in 2000. The plate of SME board was established by the SZSE on 17 May, 2004, and eight companies

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[5] Refers to Shenzhen Stock Exchange fact books 1999-2010.
[6] As the distinction of functions of the SZSE and the SHZE, the SZSE no longer issued A-Shares after 2000. The SZSE beginnings offered SME board in 2004 and attracted small and medium size enterprises.

were post listed on the SME board on 25 June, 2004. After 2004 SZSE began listing new IPOs but only on the SME board. As one of the two stock exchanges on the China mainland, the SZSE has grown with other China securities markets. After 22 years' development, the SZSE has successfully built a national-level securities market in a new city[7] through the use of modern technology. Now the SZSE is playing a very important role in establishing the modern enterprise system, promoting the adjustment of economic structure, optimizing the allocation of resources, and spreading the knowledge of market economy.

3.6 Introduction of the Shanghai Stock Exchange

The SHSE is one of two stock exchanges in mainland China, and is located in Shanghai Pudong. The SHSE was founded on 26 November, 1990 and officially opened on 19 December 1990. The SHSE was entirely unlocked on 21 May, 1992. By market guiding, the average market stock price raised 570% in three days. That May-day is known as the real birthday of the Chinese stock markets.

The SHSE is a non-profit organization and under the direct management of the China Securities Regulatory Commission. Its main functions include providing place for securities trading, formulating the operational rules of the stock exchange, supervising the IPO listing arrangements and applications, organizing and monitoring the securities trading, regulating listed companies and investors, managing and disclosing the market information. The SHSE uses electronic auction trading for market transactions and all transactions must be approved by the terminal computer under the principle of price and time priority.

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[7] Shenzhen is PR China's first special economic zone, which was established under the approval of the State Council on 26th August, 1980.

The SHSE is a member of the International Organization of Securities, the Asia and Oceania Exchange Association, the World Federation of Exchanges. After sustained development over many years, the Shanghai securities market ranks number one on the mainland. The number of listed companies, stocks, market capitalization, market value, stock turnover, stock transactions and bond transactions and other indicators are ranked top in mainland China. Until the end of 2009, the SHSE had 870 listed companies, 1,351 securities, and the total market value was more than 18 trillion yuans. A large number of national enterprises, key enterprises, fundamental industries, and high technology enterprises have raised funds and transformed their operational mechanisms through listings.

Table 3.2 Summary of the SHSE 1999-2010[8]

Year	1999	2000	2001	2002	2003	2004
Number of Listing Firms	484	572	646	715	780	837
New Listing Firms	46	88	75	70	67	61
Stock Market Capitalization (trillion RMB)	1.458	2.693	2.759	2.536	2.981	2.601
Stock Trading Volume (trillion RMB)	1.697	3.137	2.271	1.696	2.082	2.647
Investor Accounts (million accounts)			34.296	35.557	36.436	37.870
Capital Rising (billion RMB)			95.749	61.430	56.096	45.690
Number of Listing Stocks	579	668	744	759	824	881
Number of A-Shares	525	614	690	705	770	827
Number of B-Shares	54	54	54	54	54	54
Market P/E Ratio	37.090	58.220	37.710	34.430	36.544	24.231
Securities Investment Fund			23	25	25	25

Year	2005	2006	2007	2008	2009	2010
Number of Listing Firms	834	842	860	864	870	894
New Listing Firms	3	13	25	6	9	28
Stock Market Capitalization (trillion RMB)	2.310	7.161	26.984	9.725	18.466	17.901
Stock Trading Volume (trillion RMB)	1.924	5.782	30.543	18.043	34.651	30.431
Investor Accounts (million accounts)	38.560	41.010	71.305	79.729	89.654	98.510
Capital Rising (billion RMB)	2.997	171.441	670.133	89.291	334.315	553.214
Number of Listing Stocks	878	886	904	908	914	938
Number of A-Shares	824	832	850	854	860	884
Number of B-Shares	54	54	54	54	54	54
Market P/E Ratio	16.330	33.301	59.238	14.850	28.732	21.610
Securities Investment Fund	26	26	17	16	18	25

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[8] Refers to Shanghai Stock Exchange fact book 2001-2010.

The number of listing firms and stocks increased from 1999 to 2010. According to Table 3.2, the SHSE market capitalization and trading volume also increased regarding the increased number of listed stocks and number of investors. The average P/E ratios were very high and indicated the investors were not rational. Overall, the SHSE was a very fast growing security market during the decade 1999-2010.

In 2007 and 2008, many irrational speculative traders rushed into the market and made SHSE temporarily the world's second largest market in terms of trading volume. The Shanghai Stock Composite Index reached a record high of 6,124 points in October 2007, but the index went down 65% in 2008 due to the impact of the global economic crisis in the middle of that year.

In 2009, the Chinese government promulgated a huge stimulus plan, the Central Bank released a huge amount of currency and the Shanghai Composite Index increased from 1664 to 2,478 points; the yearly growth rate ranked at the top of the global capital markets. Chinese stock markets become a more important player which influenced the global stock markets.

The Shanghai Composite Index had risen to 2,245.43 points on 14 June, 2001 and had fallen back to the same level in 2011. According to well-known financial expert, Professor Hong Hao of Beijing Jiaotong University, the Chinese GDP grew nearly 500% over the period but A-Share markets had no increase in ten years; the conclusion being that Chinese stock markets lost their function as the country's economic barometer. Professor Hong believed complete distortion of the market value and unlimited IPO expansion were the major reasons for markets falling.

3.7 Introduction of Hong Kong Stock Exchange

The HKEX had always been committed to leading the Hong Kong financial services industry and breaking geographical boundaries, and it remains an important member of the global financial market. The HKEX itself was post listed as a company in June 2000. As a listed company, the HKEX is grasping opportunities to develop its business regionally and all around the world. HKEX is considered in order to give a holistic picture of the growth of the Chinese Stock Exchanges. Even though HKEX was not analysed in the study, it is important because politically these two jurisdictions are interrelated. The Hong Kong market may indicate how open China markets may be in years to come.

The HKEX operates under the direct management of managers and board of directors. The highest policy making body is the board of directors, which is responsible for main strategy, operating matters and the formulation of relevant policies.

The HKEX is committed to fulfilling its functions, ensuring that market trading is fair and orderly with prudent risk management. The HKEX organization made its market operation more effective under the supervision of the Hong Kong Securities and Futures Commission. The capital market regulatory mechanism has changed from a regulatory review gradually shifting toward the disclosure of market information. The purpose of the review was to ensure that comprehensive regulation disclose of all important facts is fair with all investors being fully informed and able to make investment decisions. The HKEX board includes no more than six directors appointed by the Hong Kong financial secretary, no more than six directors elected by the shareholders, and a CEO.

The HKEX provides extensive investment services before and after trading. Its departments include a market division, settlement department, business development department, an investor service department, information service department, and an information technology department. Those departments are committed to providing service to investors, market intermediaries and listed companies. Revenue was 2.39 billion HKD in 2004, and net profit was 1.1 billion HKD in 2004. Currently, it is the most profitable exchange out of all listing exchanges in China and the profits of pan European, Swedish, Australian, and Singapore stock exchanges are relatively inferior when compared to the HKEX.

In a mature international market, the HKEX derivatives market can satisfy the needs of investors. The market currently has four types of futures and options. First, the stock market indices, including Hang Seng index future, mini Hang Seng index future, and China free investment index future. Traded options include three stock index options, viz Hang Seng Index Option, mini Hang Seng Index Option, and H-Share Index Option, as well as 37 designated stock options. Secondly, the stock products, including 29 stock futures, 31 stock options, 20 international stock futures and 20 international stock options. Thirdly, interest rate products, including one month HKD interest rate future, three months HKD interest rate future, and three year foreign currency bond future. Fourthly, foreign exchange products, including Euro, British Pound, and Japanese Yen rolling exchange rates. The Hang Seng index future has the longest history and the largest trading volume, accounting for about 40% of the total trading volume. The H-Share index future was launched at the end of 2003. Due to institutional investors, share holdings increased substantially and derivative products were created to hedge risk for those investors. The future trading volume trended steadily upwards and accounted for about 15% of the total trading volume.

Table 3.3 Summary of HKEX 1999-2010[9]

Year	1999	2000	2001	2002	2003	2004
Number of Listing Firms	708	790	867	978	1037	1096
New Listing Firms	38	90	88	117	73	70
Stock Market Capitalization (trillion HKD)	4.735	4.862	3.946	3.611	5.548	6.696
Stock Trading Volume (trillion HKD)	1.920	3.132	1.990	1.643	2.584	3.974
Capital Rising (billion HKD)	149.703	467.337	64.428	110.514	213.760	281.800
Number of H-Shares (Main board)				54	64	72
Number of Red Chips (Main board)						
Market P/E Ratio	26.770	12.950	12.300	14.980	19.080	18.800
New Securities Investment Fund	23	21	22	9	8	10

Year	2005	2006	2007	2008	2009	2010
Number of Listing Firms	1135	1173	1241	1261	1319	1413
New Listing Firms	67	62	84	49	73	113
Stock Market Capitalization (trillion HKD)	8.180	13.338	20.698	10.299	17.874	21.077
Stock Trading Volume (trillion HKD)	4.520	8.376	21.666	17.653	15.515	17.210
Capital Rising (billion HKD)	301.706	524.538	590.846	427.248	642.118	858.721
Number of H-Shares (Main board)	80	95	104	110	116	128
Number of Red Chips (Main board)	86	86	89	89	92	97
Market P/E Ratio	15.610	17.390	22.560	7.270	18.190	16.720
New Securities Investment Fund	13	15	26	33	52	79

The number of listing firms and stocks increased from 1999 to 2010. According to Table 3.3, the HKEX market capitalization and trading volume also increased due to the increased number of listed stocks, especially the increased H-share and red chip companies. The average P/E ratios were low. Compared with the SHSE and the SZSE, the P/E ratios indicated that HKEX investors were relatively rational. The possible reasons being that the HKEX is a mature and more internationally based market. Overall the HKEX was a fast growing security market, but not as fast as the SZSE and the SHSE.

The HKEX is the most effective channel for Chinese enterprises to raise international capital. The partnership between HKEX and other stock markets is meaningful for the Chinese economy. In the development of global financial markets, the HKEX has the potential to

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[9] Refers to Hong Kong Stock Exchange fact book 1999-2010.

become a major international market with high flow of capital and relatively low transaction costs. The HKEX didn't just ensure that Hong Kong maintains the most important market position in China, it also provides funds to support the economic development of China. Up until 2010, 592 Chinese IPOs post listed on the HKEX, including 128 H-Shares firms, 97 red chip firms and 301 private firms. Overall mainland China based stocks represent 57% market capitalization and 66% of trading volume on the HKEX.

3.8 Supervisor

Supervisory boards in China differ from those in some other countries like Germany. Members are appointed by government. Supervisors are responsible for overseeing the financial condition of the company, monitoring the implementation of top management and board of directors, and implementing other supervisory duties prescribed by the company constitution. According to the Chinese Company Act, the composition of the supervisors, known as the board of supervisors, is the necessary organization for each company. Usually the board of supervisors is made up of shareholders and employee representatives. Directors and top managers cannot concurrently serve as supervisors.

According to the Chinese Company Act (2005) article 118, a limited stock company must have a board of supervisors with at least three members. The board of supervisors must include shareholder representatives and an appropriate proportion of company employee representatives. The percentage of employee supervisors shall be no less than one third. Employee supervisors should be appointed by the employee congress or other forms of democratic election. The chairman of the board of supervisors shall be elected by supervisors and convenes and presides at supervisor meetings. Relatively smaller companies need not establish a board of supervisors, but they must have one or two supervisors.

According to the Chinese Company Act (2005) article 71, a state-owned company must have a board of supervisors with at least five members. The board of supervisors includes representatives appointed by the state-owned assets regulatory institution and no less than a third of the board must be employee representatives. The chairman of the board of supervisors should be appointed by the state-owned assets regulatory institution.

Foreign investment companies based in China have been required to establish a board of supervisors since 1 January, 2006.

According to the Chinese Company Act (2005) article 120, the board of supervisors must hold at least once every six months. When the board of supervisors passes a motion, it must be favoured by more than half of the board.

Any supervisor may propose to hold interim meetings. According to the Chinese Company Act (2005) article 53, each term of office of the supervisors shall be three years. The supervisors may, after the expiry of their term of office, hold a consecutive term upon reappointment.

According to the Chinese Company Act (2005) article 54, boards of supervisors have several functions. First, supervisors have the right to censor the financial affairs of the company. Second, they supervise the duty-related acts of the directors and top managers, and may put forward proposals on the removal of any officers who violate laws, administrative regulation, any bylaw or any resolution of the shareholders' meeting. Third, they may demand any director or senior manager to make corrections if his/her act has injured the interests of the company. Fourth, they may call interim shareholder's meetings, to call and preside over

shareholders' meetings when the board of directors does not exercise the function as prescribed in this law. Fifth, they may put forward proposals at shareholders' meetings. Sixth, they may initiate actions against directors or senior managers according to the Chinese Company Act (2005) article 152. Finally, the board undertakes other duties as provided for by the bylaw.

The descriptions above show that the supervisor is an important position in the Chinese company corporate governance system. Hence, the number of supervisors and supervisors' meetings each year was selected as a potential independent variable which may affect short- and longer-term IPO performance.

3.9 Relationship between Chinese and International Stock Markets

The SZSE, the SHSE, the HKEX and US stock markets influence each other. The China economy is an emerging but fast growing economy, and also, the A-Share market is a closed market and many investors are not rational investors. In its peak period, the market average stock P/E ratio was close to 70, but there were still many investors who wanted to enter the markets; people invested in the stock market just like gambling. And in the trough period, even well-performing stocks received just an average P/E ratio of 8. The HKEX is an international stock exchange with capital from mainland China entering this market in 1993. The HKEX is a relatively more mature market; investors' risk preference is far smaller than mainland investors.

Twenty years ago, from the initial stage of development, almost no foreign investors paid attention to the A-Share markets. A-Share markets were very ordinary stock markets, had very few stocks and the trading volume was very small. Even in China, only a few Chinese newspapers published the stock market information in the corner of their newspapers, and

most Chinese didn't care about stocks. But A-Shares began to impact on global capital markets after 20 years' development. As a result of direct international investment and the interlink with international capital markets, many A-Share investors began to feel the impact of New York, London, Hong Kong and many other markets on Chinese stock markets after 2007. And many domestic investors started the habit of waiting for global market information at night or early in the morning, wanting to know how the global financial information would affects their investments in the SZSE and SHSE.

On 31 August 2009, A-share markets suffered a rare slump; the Shanghai Composite Index fell 6.74%, and the Shenzhen Composite Index fell 7.55%, reacting to the market rumours that the monetary policy would be adjusted. The A-Share tumble immediately triggered a global stock market plunge; the Hang Seng Index fell 4.84%, other major Asian stock markets also fell deeply. Even the Dow Jones Index fell 1.74% and Nasdaq Composite Index fell 1.06% in a day. The major European stock indices also fell about 1%. That A-share markets were affecting the international capital market was becoming more and more obvious.

3.10 Introduction of A-Shares

Chinese listed shares are differentiated as A-Shares, B-Shares, H-Shares, N-Shares, and S-Shares. The distinction between shares depends on the different markets, investors, company or business type, and trading currencies. A-Share has the official name of Renminbi (RMB) trading shares. It is the ordinary share of domestic Chinese companies, where the subscription and trading is in RMB. Investing is by domestic institutions, organizations of investors, and individual investors (excluding Taiwan, Hong Kong, and Macao investors). A-Shares have a 10% price movement limitation per trading day.

In 1990, there were just 10 A-Shares listed in Chinese stock markets. At the end of 1997, the number had increased to 720, with a total value of 1.8 trillion RMB, equal to 22.7% of the current year's national GDP. And the trading volume was 3 trillion RMB.

A-Shares have the following characteristics. First, they are issued within the territory of China and only domestic investors are allowed to subscribe to RMB. Secondly, A-Shares account for the largest proportion of trading shares and turnover is relatively high. But normally, A-Shares are not the largest proportion of shares held by many listed companies, because most listed companies have large amounts of un-trading state-owned shares and legal person shares. Thirdly, the commonly held view is that A-Share investors only focus on profit distribution and historical performance, and do not pay attention to other shareholders' rights.

3.11 Introduction of B-Shares

B-Share markets were established in 1992. B-Shares are traded on the SHSE and SZSE. B-Share is the official name of the RMB's denominated special shares but are bought and sold by USD on the SHSE, and HKD in the SZSE. Those B-Share issued firms are registered in China and listed on Chinese stock markets. In their early stage, only foreign investors, including Hong Kong, Macau and Taiwan investors, could invest in B-Shares, but after 2001, mainland residents who held legitimate foreign currencies could also invest in B-Shares. As with A-Shares, B-Shares also have a 10% limitation of price movement per day.

3.12 Introduction of H-Shares

H-Shares are issued by state-owned enterprises registered in the mainland but post listed in the HKEX (H is the first letter of Hong Kong). So H-Shares are more closely related with the growth of the Chinese economy. There is no price movement limitation for H-Shares.

H-Shares are state-owned enterprise shares that are approved by China Securities Regulatory Commission (CSRC) and then listed in the HKEX. H-Shares and red chips are both listed on the HKEX with mainland background, but H-Shares are different from red chips. If a mainland background IPO is not registered in the mainland, but registered in Hong Kong or any other countries, and its IPO had been listed in HKEX, then it would be divided into red chips. If the company is registered in the mainland, it would be divided into H-Shares. In fact, red chips are the shares of subordinated enterprises registered in HKEX, but their parent companies are state-owned enterprises on the mainland.

H-Shares are only available to foreign investors and Chinese institutional investors; they are not for Chinese individuals. Tsingtao Beer became the first H-Share and post listed in HKEX in 1993. More than 80 enterprises listed on the HKEX main board and Growth Enterprise Market (GEM) board over ten years and raised a total volume of 150 billion HKD until 2003. For H-Share firms, the major purpose is fund raising. Another important purpose is that CSRC hoped those H-Share listed companies would enter the international market through international stock market competition and finally establish multinational co-operations. In fact, over ten years, H-Share enterprises' management, accounting, and transparency levels have greatly improved, and they are not very far away from world class standard after ten years.

The Hang Seng China Enterprise index is also known as the H-Shares index, which is the weighted average price index of all H-Shares listed on the HKEX. The H-Shares index was launched in 1994 after ten H-Shares had been listed on the HKEX. The objective of the H-Shares index is to provide a reflection of Chinese companies' performance to HKEX investors.

3.13 Introduction of Red Chips

If a company was registered outside the Chinese mainland but listed overseas, and the largest shareholder was directly or indirectly subordinated to mainland enterprises, the company was classified as a red chip company. From a Chinese perspective, red chips belong to the domestic shares.

The red chips concept was born in the HKEX in the early 1990s. The People's Republic of China was called Red China by Hong Kong and by international investors at that time and consequently those offshore registered companies listed in the HKEX with Chinese mainland backgrounds were known as red chips. Red chips can be distinguished by business scope and type of shareholders. If a company is registered outside China and listed on the HKEX, but its major business and most of its profit is gained from mainland China, it is a red chip company. And if a company is registered outside of China and listed on the HKEX, but the major shareholders have a Chinese background, it is also defined as a red chip company.

Before 1997 the Hong Kong capital market had been exhibited both British and Chinese characteristics reflecting Hong Kong's long international history. When China resumed sovereignty of Hong Kong, the Hong Kong and mainland economies became more closely linked. Mainland companies gradually began to enter into the HKEX, and then formed the third group of companies, which are Chinese funded enterprises.

Red chips entered into the stage of rapid development after 2000. Twelve red chips were post listed in 2000. There are 84 red chips listed in the HKEX until 2004.[10]

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[10] Refers to SHSE research office.

Chinese enterprises began listing on the Singapore Stock Exchange in 1993. In both 2003 and 2004, there were 12 Chinese enterprises listed in Singapore; most of those companies were private companies and red chip companies. A total of 47 Chinese companies had been listed in Singapore during the decade 1992 to 2012, also known as "Dragon Chips". Chinese enterprises began listing in the US in 1992; most of the listed stocks are red chips. In addition, there are small amounts of red chips in London, Toronto and Tokyo Stock Exchanges.

During the 1990s, some mainland Chinese-funded companies acquired the small- and medium-sized Hong Kong listed companies and reformed them as red chips. In recent years Chinese-funded companies have reorganized and registered their subordinate companies in Hong Kong and then listed their subordinated companies on the HKEX as red chips. Red chips have become an important channel for Chinese companies to enter international capital markets – similar to H- and B-shares. The rise and development of red chips has also had a positive impact on the HKEX.

3.14 Difference between H-Shares and Red Chips

Thus both red chips and H-Shares are listed on the HKEX, but the fundamental difference is that red chips are registered and managed overseas, and H-shares are registered and managed in mainland China. For red chip stock, 100% of shares can be traded. For H-Share stock, some of the shares are state-owned shares or are legal person shares so they are un-tradable. If a company wants to issue new shares, red chips may have greater flexibility while H-Shares may take a relatively longer time and have a higher risk. On the issuance of new shares and bonds, red chip companies do not needs to meet the mainland legal procedures but H-Share companies do and their issuances have to be approved by the relevant state departments.

3.15 Introduction of S-Shares

S-Shares refer to the listing shares of companies registered and operating their core business in mainland China, but are listed on the Singapore Stock Exchange.

3.16 Introduction of N-Shares

N-shares refer to the listing shares of companies registered and operating their core business in mainland China, but are listed on the New York Stock Exchange.

3.17 Conclusion

This chapter examines the introduction of the Qing Dynasty stock market and Hong Kong stock market history, the introduction of the Shenzhen, Shanghai and Hong Kong stock exchanges, and the relationship between Chinese and international stock markets. This chapter also explains the introduction of A, B, H, S, N and red chip classes of shares. While it is true that Chinese stock markets are developing they also have a long time history. The next chapter covers the background and progress of the New Zealand Stock Exchange.

CHAPTER 4 BACKGROUND TO THE NEW ZEALAND STOCK EXCHANGE

4.1 Introduction

The previous chapter provided background about the growth of Chinese stock markets over the last 200 years along with brief information about the different classes of shares. This chapter covers the background and progress of the New Zealand Stock Exchange.

4.2 Introducing New Zealand's stock trading history (19th Century)

Compared with Chinese stock markets, the New Zealand stock market is small, has less trading volume, fewer listings but a far more developed market. The New Zealand Banking Company was established by influential settlers in 1840, the first New Zealand-founded bank. Later on, other banks were established in New Zealand and offered bank shares to the public, but the only place for investors to purchase those shares was from their head offices, and they were normally located in the UK or Australia. Most of the investors were also located in UK. Insurance companies also started to sell shares in 1859.

The gold rushes of the 1860s led to more active share trading in New Zealand; actually the New Zealand Stock Exchange emerging from a group of regional exchanges. At that time many quartz mining industry corporations were established and those companies needed to attract capital. The Otago Pioneer Quartz Mining Company was founded in 1864; it raised a total of 12,000 pounds capital. At the same time, stock trading became active in Shanghai and HSBC was established in Hong Kong. In 1867, Dunedin stock agents Connell and Moodie established the first stock exchange in New Zealand, named Dunedin Brokers' Association, which not only traded in mining stocks, but also bank, insurance, and shipping stocks or government debentures. The Otago Brokers' Association was formed in 1868. In 1868, after a rich lode of gold was discovered at Thames, the very first New Zealand stock boom began.

Brokers traded shares for more than 300 mining corporations in the Auckland area, but the boom had faded by 1873.

The Auckland Brokers' Association was established in 1872. The association traded mining, shipping, bank and insurance shares. In 1880, corporations dredging for gold in Otago led to the second New Zealand stock market boom. The Otago Brokers' Association became the Dunedin Stock Exchange in 1893. The Wellington Sharebrokers' Association had been established in 1882, and became the Wellington Stock and Sharebrokers' Association in 1896.

4.3 Introducing New Zealand's stock trading history (20th Century)

In 1915 the five stock exchanges of Dunedin, Otago, Auckland, Wellington and Thames established the Stock Association of New Zealand. The head office was set up in Wellington and Arthur Bate became chairman of the association. The Taranaki exchange joined the association in 1916, Invercargill joined in 1920, and Gisborne joined in 1922.

During the Second World War there was no active share trading on the New Zealand stock market. Only government bonds, municipal debentures and bonds were traded in the markets. At the same time, Shanghai Stock Exchange and Hong Kong Stock Exchange were also closed because of war. At the 1949 election, New Zealand's National Party government came to power, repealed the war regulations and removed the income tax from stock holdings capital gain.

In 1976 the Stock Association of New Zealand investigated the formation of a national exchange. The Christchurch and Invercargill exchanges merged in 1978. The national New Zealand Stock Exchange was established in 1983. The NZSE became a member of the World Federation of Exchanges in 1984. The remaining three independent local exchanges were

merged in 1989. Bill Foster became the first managing director of the NZSE in the same year, and the head office of the exchange remained in Wellington. At the same time, Shenzhen City Hall made the decision to build up the Shenzhen Stock Exchange in China.

The first six years of the 1980s was a "golden age" for the NZSE. The market capitalisation was 44 billion New Zealand dollars (NZD). In that period, the New Zealand stock market was the best performing market in the world. From 1982 to 1987, the New Zealand stock market rose about 600%. In 1987, NZSE share prices reached the highest point in its history with 309 companies listed at that time. But along with the rest of the world, the New Zealand market collapsed on "Black Friday" 20 October, 1987. During the first two years after the market crash, more than 200 companies delisted and market capitalization decreased to 20 billion dollars. Following the 1990 election, the government cut the fiscal deficit, alleviated the pressure of inflation, and also approved interest rate cuts. The stock market reawakened. In 1991 the exchange introduced NZSE40 and NZSE30 indices as measurements of market performance. In 1993, only 140 companies had survived and remained listed. By 2000, there were 224 listed stocks and the market capitalization was 46.8 billion NZD. That was 13 years after the market crash and even taking inflation into consideration the NZSE still had not reached the high point it experienced before the crash. In contrast to other developed stock markets, the New Zealand stock market did not rebound from the trough before the 21st century. The former exchange chairman Sir Eion Edgar related the poor performance to sluggishness in listed companies' performance. However a former Finance Minister Labour's Dr Michael Cullen believed that stock performance did not reflect the local economic growth, and that the stock market had a "structure problem".

4.4 Introducing New Zealand's stock trading history (21st Century)

Mark Weldon was appointed as CEO of the NZSE in 2002. On 31 December 2002, the NZSE became a limited liability trading company. In 2003, the NZSE IPO had been listed on its own exchange with a trading code "NZX". Now the NZSE has four trading halls in the country, located in Auckland, Wellington, Christchurch and Dunedin. Historically, these were the local stock exchanges. In the NZSE, the major investors are individuals; they hold about 50% of stocks. NZSE uses a fully computerised trading system. The system can provide trading information to investors, and also disclose important company information. All transactions are operated in NZD; a trading unit includes 100 shares. Compared with Chinese stock exchanges, capital gains are relatively small on the NZSE, but the dividend payments are relatively higher.

Table 4.1: Summary of the NZSE 2002-2010[11]

Year	1999	2000	2001	2002	2003	2004
Number of Listing Stocks		224		153	170	204
New Listing Stocks					25	40
Market Capitalization (billion NZD)					50.340	61.340
Stock Trading Volume (billion NZD)	25.000	32.000	29.000	22.000	20.400	26.000
Number of Trades	650000	720000	680000	520000	558393	636500
NZX50 Index		1926.380	2115.430	1955.450	2304.870	2684.110
New NZDX Listing					6	5
New NZAX Listing					9	10

Year	2005	2006	2007	2008	2009	2010
Number of Listing Stocks		130	144			
New Listing Stocks						
Market Capitalization (billion NZD)						
Stock Trading Volume (billion NZD)	31.640					
Number of Trades	649230					
NZX50 Index	2752.410	3150.280	2997.970	1904.780	2140.420	2081.770
New NZDX Listing						
New NZAX Listing						

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[11] Refers to NZX Company Research Database, NZX annual reports 2003-2010, many factors are unavailable.

The NZSE includes four major markets: NZSX, NZAX, NZDX and NZCX. NZAX is the marketplace for small and medium sized growing IPOs. NZDX is designed for corporate bonds, government bonds, and fixed income securities.

The NZSX provides nine portfolio indices: NZX50 is the headline index, comprising the 50 largest companies in the NZSX. NZX20 comprises the 20 largest companies and NZX15 comprises the 15 largest companies in the NZSX. NZX50 portfolio comprises the 50 largest companies in the NZSX, but limits the weight of each security to 5% of index market capitalization. The SciTech index includes companies with a significant business interest in new technologies and innovation; all participants are from NZSX and NZAX. NZX10 comprises the 10 largest companies in the NZSX. NZX MidCap comprises all medium sized companies in NZX50 but excludes NZX10 companies. NZX Small Cap comprises all NZSX companies but excludes NZX50 companies. The NZX is comprised of all NZX listed companies.

Since 2010 the NZSE has moved to expand securities traded by moving into the futures and option market, which it denotes as NZCX. NZCX is designed for options and futures products based on dairy and equity contracts. When the NZSE launched its futures and option market for dairy, it was the first in the world. Dairy products trading is based on fundamental products and dominated by five commodities: Whole Milk Powder (WMP), Skim Milk Powder (SMP), Butter, Anhydrous Milk Fat (AMF) and Cheese. WMP and SMP are more traded than others. As New Zealand is the largest dairy product exporter in the world, dairy futures and options are very important for domestic farmers and exporters to manage their products' price risk and also provide a forward view of price for dairy industry participants. The major contracts include WMP futures, WMP options, SMP futures, and AMF futures.

NZSE also established NZX Agri, which is a major provider of data and information services for the farmer and agriculture business participants. It focuses on dairy, meat and other agricultural commodities grown in New Zealand. NZX Agri helps people working in the agricultural sector to acquire the important and relevant news, market data, publications, and analysis from New Zealand and the rest of the world.

The listing corporations must meet the listing requirements of the stock exchange. The NZSE requires all listed companies to promptly disclose all relevant information to the exchange and investors, in order to ensure market participants get all information at any time. The listed firms must sign the listing agreement with the stock exchange, and submit semi-annual reports and annual reports on time. The listed companies also have responsibility to report their sales turnover, profit, ROA, ROE, director information and other important factors in the annual report.

4.5 Similarities of the New Zealand and Chinese stock markets

New Zealand and China are very different countries; reflected in their size, population, and legal and political systems. Even from an economic perspective, those countries have very different economic standards, such as degrees of market maturity, GDP, GDP per capita, export, import, and so on. But there are still some interesting similarities in their stock markets.

First, both countries began modern stock trading in the 1860s coming from a colonial economy background. That is because when the colonial economy became prosperous, stock trading was introduced by British businessmen into Shanghai, Hong Kong, and also New Zealand. For both countries, stock trading started from banks and insurance companies, and then moved on to include raw material and utilities.

Secondly, the development of stock markets was stopped by war. During the Second World War time, only government bonds, municipal debentures and bonds were traded on the New Zealand stock markets. At the same time, Shanghai Stock Exchange and Hong Kong Stock Exchange were closed because of Japanese aggression.

Thirdly, the local exchanges were finally merged into a national exchange in 1989 in New Zealand. Chinese stock exchanges were established in 1990, almost at the same time.

Fourthly, both New Zealand and Chinese stock markets are not very attractive to foreign IPOs. Unlike the exchanges of New York, Tokyo and Singapore, there are no foreign IPOs listed in Shanghai and Shenzhen, even though these exchanges are two of the top ten exchanges in the world in trading volume. Even on the Hong Kong Stock Exchange, most foreign IPOs listed there are from mainland China. There are not many foreign IPOs listed in New Zealand, except IPOs from Australia. So the performance of stock markets in New Zealand and China may be an important standard for indicating each country's domestic economic situation.

In more recent years, the New Zealand economy has become more integrated with Asian economies. The tests of how corporate governance impacts on IPO returns in New Zealand and China will enable a valuable comparison.

4.6 Conclusion

This chapter covers the background and progress of the New Zealand Stock Exchange. The next chapter provides the research questions, hypotheses, models, variables, statistical tests and suitable regression formulations for this research.

CHAPTER 5 METHODOLOGY

5.1 Introduction

The previous two chapters presented the background to the Chinese and New Zealand stock markets. It also provided brief information about the different classes of Chinese and New Zealand shares.

In Chapter 5 the methodology and research method are discussed. These include the initial research questions, hypotheses, models (including potential independent and control variables), statistical tests and suitable regression formulations to test the relationship between corporate governance and the short- and longer-term IPO performance.

Corporate governance mechanisms and IPO performance have been widely studied by researchers and tested in both developed and developing markets. IPOs are very important for investors, stock markets and economic growth, because they are the way that firms raise capital from the public. Investors may place resources with new ventures promoting potential growth and long-term sustainable returns. The success of IPOs is not only important for the survival of the company, it is also important for the longer-term contribution IPO can make to the economy through employment, growth, etc.

Prior research has focused on the returns of IPOs on listing, the longer-term returns of IPOs and, recently, on the impact of attributes of board directors on companies' listing performance. However, the impact of corporate governance upon the longer-term performance, and the pattern of returns as the companies move forward from new listing remain unclear. The importance of governance to longer-term sustainable IPO performance is a key issue for the research method developed below.

5.2 Research Framework

The previous literature suggests that corporate governance mechanisms have an impact on IPO performance in developed and developing countries at different levels. However, most studies have focused on large and developed economies, viz United States, United Kingdom, other European nations, Australia and Japan. There are very few studies focused on smaller developed economics, viz New Zealand, Singapore, or even Hong Kong. The New Zealand economy is increasingly becoming more integrated with Asian economies, but culture, lifestyle, politics and legal systems are very different in East and North Asian countries.

There is also substantial literature relating to large but developing economics, viz China, India, Russia and Brazil. China is now the second largest economy in the world, after the United States. Researchers have investigated many issues relating to the Chinese stock exchange, but the material relating to corporate governance and IPOs is small. IPOs are very important in most nations, but there are some differences in China. IPOs are the way firms raise capital from the public but they may not be correlated with the economic growth of China. From 1999 to 2011, on average, the Chinese economy achieved 10% growth increase a year and during that period stock market indices stayed at almost same level.

The aim of this research is to examine the impact of corporate governance practices in China and New Zealand on the short- and longer-term sustainable returns from IPOs. The countries selected for the study reflect differing degrees of market maturity, political, legal and cultural bases. The tests of how corporate governance impacts on IPO returns in culturally different countries will enable a valuable comparison. Furthur, the separate studies of the Shanghai Stock Exchange and Shenzhen Stock Exchange may provide different results regarding size, target, and participants.

Prior researchers have emphasised the difference between short-term and long-term IPO performance. According to Allen, Morkel–Kingsbury and Piboonthanakiat (1999) and Durukan (2002), the short-term IPO performance is negatively related to long-term IPO performance. Kao, Wu and Yang (2009) indicate that short-term Chinese IPOs are overestimated by investors. Most prior research employs a single long-term IPO return, viz three years or five years buy-and-holding abnormal return (BHAR). But corporate governance mechanisms may change every year or even less than a year, perhaps when a new CEO is appointed, directors resign, shareholders buy and sell, or any other changes. This study employs yearly long-term IPO performance to indicate the relationship between yearly corporate governance mechanisms and sustainable IPO performance.

Prior researchers have also emphasised the relationship between corporate governance and firm performance. Abdullah (2004) finds that board independence and CEO duality have no significant effect on firm performance, and outside directors dominate the firm board in Malaysia. Chen (2001) indicates SOE share is negatively associated with corporate performance, but domestic institutional and managerial ownership improves firm performance in China. Dwivedi and Jain (2005) find that foreign shareholding and board size are positively associated with firm value and shareholder wealth, and directors' shareholding and public shareholding have a negative association with firm value and shareholder wealth in India. Ting (2006) finds positive effects of corporate governance on firm performance, which indicates the importance of corporate governance during poor economic conditions in Taiwan. Chang (2009) indicates that firms with a large percentage of outside directors are less likely to face financial distress, but large board size is more likely to correlate with financial distress in China. Most prior studies tested only a part or some parts of governance

mechanisms, viz directors, management, or ownership variables. This study includes all possible governance compositions, viz board size, board demographics, board leadership, board education, and board evaluation variables.

The study is based on five research questions.

1. Is long-term IPO performance related to corporate governance mechanisms in the SHSE, SZSE and NZSE?

2. Is short-term IPO performance related to corporate governance mechanisms in the SHSE, SZSE and NZSE?

3. Is Chinese IPO performance related to different governance mechanisms, associated with the size and participant differences between the stock exchanges?

4. Are Chinese and New Zealand IPO performance related to different governance mechanisms, because of the different institutional systems (viz board structure difference, CEO and chairman age and qualification, SOE ownership) and exchange regulations difference of countries?

5. Is IPO performance on the SZSE and NZSE related to similar governance mechanisms because of their similar size?

The study extends and makes several contributions to the current literature. First, compared with previous studies, the study employs a wide range of governance variables. The study adds to the understanding of how different governance mechanisms impact the short- and long-term IPO performance. Secondly, most prior studies test either short-term or long-term IPO performance over a specific period. This study tests the IPO performance for as many as 11 years. Thirdly, most previous studies have focused on large and developed economies, viz United States, United Kingdom, other European nations, Australia and Japan. This study provides evidence from China, which is the world's fastest growing economy and has developing stock markets, and evidence from New Zealand, which has a developed but small

stock market. Fourthly, most previous literature tests the impact of corporate governance on IPO and firm performance in one market, but this study offers a comparison between two Chinese stock markets, and even comparisons between two countries. Fifthly, this study uses a more robust empirical analysis, extending the commonly used OLS approach, with careful diagnostic testing and then applying a more appropriate model as appropriate.

5.3 Conceptual Framework

Figure 1 provides the conceptual framework for the study. On the left hand side are the corporate governance mechanisms selected from Chinese and New Zealand stock markets. These variables are organised into five groups of governance compositions, which from the literature have been shown to be potentially important and significant for short- and long-term IPO performance. These independent variables include board size, board demographics, board leadership, board education, and board evaluation. There are three long-term dependent variables, viz yearly abnormal return, long-term Tobin's Q, and long-term ROA. There are also three short-term dependent variables, viz first day abnormal return, short-term Tobin's Q and short term ROA. The control variables such as size, beta, labour, market factors, industries, and years of listings may also impact corporate governance and IPO performance.

Figure 5.1 Conceptual Framework: A model of Corporate Governance Mechanisms and IPO performance in China and New Zealand

Governance Mechanisms

MD Age
MD Gender
MD Qualification
MD Experience
MD Salary
Top Three Officer Pay
CEO Duality
Chairman Experience
Chairman Qualification
Number of Directors
% of Independent Directors
Female Directors Number
Number of Supervisors
Board Meetings per year
Supervisors Meetings per Year
Block Holder Existing
Institutional Shareholding
Insider Shareholding
SOE shareholding
Legal Person Shareholding
Non-trading Shareholding
Number of Committees
Board Committee
Remuneration Committee
Independent Audit
Largest Shareholding

IPO Performance
Yearly Abnormal Return
Long-term Tobin's Q
Long-term ROA

First Day Abnormal Return
Short-term Tobin's Q
Short-term ROA

Control Variables
Size
Beta
Labour
Listing Firms
Market Capitalisation
Market Trading Volume
Accounts
Number of A-Shares
Market P/E Ratio
IPO Industry
Years of IPO listing

5.4 Hypotheses

Prior research has considered many independent variables. These are tested using correlation analysis. Further development into multiple regressions will follow as appropriate.

According to McKnight, Tomkins, Weir and Hobson (2000), CEO age is U-shape, associated with pay and firm performance in the UK. Bonn, Yoshikawa and Phan (2004) indicate that director age is negatively associated with firm performance in Japan.

Hypothesis 1: CEO's age is positively associated with IPO performance.

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Hypothesis 2: *Chairperson's age is positively associated with IPO performance.*

Hypothesis 3: *CEO's qualification is positively associated with IPO performance.*

Hypothesis 4: *Chairperson's qualification is positively associated with IPO performance.*

Dempere (2007) indicates that directors' knowledge and experience has a positive relationship with long-term IPO performance in the US. Mclntyre, Murphy and Mitchell (2007) suggest that high-level board experience is positively associated with firm performance in Canada.

Hypothesis 5: *CEO's experience is positively associated with IPO performance.*

Hypothesis 6: *Chairperson's experience is positively associated with IPO performance.*

Adams, Gupta and Leeth (2009) indicate that firm performance preceding CEO appointments tends to favour females, implying that female CEOs are appointed to the position when the firms are in better financial condition at the time of flotation.

Hypothesis 7: *The female CEO is positively associated with IPO performance.*

According to Engel, Gordon & Hayes (2002), Lee, Lev & Yeo (2008) and Nikbakht, Shahrokhi & Martin Jr (2007), TMT pay is positively related to IPO performance in the US. Kren & Kerr (1997) and Lippert (1999) indicate a positive relationship between CEO compensation and firm performance.

Hypothesis 8: *CEO salary is positively associated with IPO performance.*

Hypothesis 9: *Top management salary is positively associated with IPO performance.*

The relationship of CEO duality and firm performance is investigated by Balatbat, Taylor and Walter (2004) indicating that CEO duality is positively associated with long-term IPO

performance in Australia. Li and Naughton (2007) find that CEO duality is positively associated with long-term IPO performance in China. Chahine and Tohme (2009) indicate CEO duality is negatively related with short-term IPO underpricing in Arab countries.

Dempere (2007) indicates that CEO duality has a negative relationship with long-term IPO performance in the US. Lam & Lee (2008) and Abdullah (2004) indicate that CEO duality has no significant effect on firm performance in Hong Kong and Malaysia. Lam & Lee (2008) and Braun & Sharma (2007) indicate that CEO duality and accounting performance are positively related in non-family firms, but negatively related in family controlled firms in Hong Kong and the US. This may be when one person holds both CEO and chairman position in non-family firms they behave as steward and increase firm financial performance. On the other hand from an agency theory perspective this duality role removes information asymmetry and increase IPO performance.

Hypothesis 10: *CEO duality is positively associated with IPO performance.*

According to Abdullah (2004); Bonn (2004); Bonn, Yoshikawa & Phan (2004); Daily, Certo & Dalton (2005), Dwivedi & Jain (2005); Staikouras, Staikouras & Agoraki (2007), and Chang (2009), board size is negatively associated with firm performance in Japan, Taiwan and Europe, but positively associated with firm performance in India, and has no influence in Australia, the US and Malaysia. Li and Naughton (2007) find that board size is positively associated with under-pricing in the short term in China. According to the agency theory if board size increase, it provides more opportunities for free-rider problems.

Hypothesis 11: *Board size is negatively associated with IPO performance.*

Abdullah (2004), Balatbat, Taylor & Walter (2004), Bonn (2004), Bonn, Yoshikawa & Phan (2004), Roosenboom & van der Goot (2005); Reddy, Locke, Scrimgeour & Gunasekarage (2008), suggest outside directors are positively related to firm value in Holland, Australia and New Zealand, but have no influence in Japan and Malaysia. Dempere (2007) also indicates that outside directors have a positive relationship with short-term IPO performance, but a negative relationship with long-term IPO performance in the US. According to Chang (2009) and Li, Wang & Deng (2008), independent directors are negatively associated with the probability of financial distress in Taiwan and China. Shan and McIver (2011) indicate that board independence is positively significant on the performance of large companies in China.

Hypothesis 12: Outside directors' participation is positively associated with IPO performance.

According to Bonn (2004), Bonn, Yoshikawa & Phan (2004), Campbell & Minguez-Vera (2008), and Reddy, Locke, Scrimgeour & Gunasekarage (2008), female directors are positively associated with firm performance in Spain, US, New Zealand and Australia, but have no influence in Japan.

Hypothesis 13: The number of female directors is positively associated with IPO performance.

Gao and Kling (2008) use the number of board member meetings a year as a corporate governance independent variable.

Hypothesis 14: The number of board meetings a year is positively associated with IPO performance.

The relationship between managerial ownership and firm performance is considered by Kroll, Walters & Le (2007), Nikbakht, Shahrokhi & Martin Jr (2007), Balatbat, Taylor & Walter (2004), and Roosenboom & van der Goot (2005), suggesting that managerial ownership is positively associated with IPO performance in the US, Australia and Holland. But Dempere (2007) indicates insider ownership has a negative relationship with long-term IPO performance in the US.

Firth (1997) and Reddy, Locke, Scrimgeour & Gunasekarage (2008) indicate that insider ownership has a negative effect on firm performance in New Zealand. Chen and Kao (2005) indicate the increase of managerial ownership decreases stock performance in Taiwan. Yang and Sheu (2006) indicate that insider ownership first decreases and then increases the likelihood of IPO survival at offering time, forming a U-shaped relationship in Taiwan. Pant and Pattanayak (2010) find that insider ownership has a positive impact on the firm productivity in India.

Carow, Cox and Roden (2007) indicate that first day returns are higher with the percentage of insider purchasing, but there is no evidence in regard to future performance. Chou, Wu & Chen (2007) and Hu & Zhou (2008) indicate that managerial ownership is positively associated with firm performance for a middle percentage of managerial ownership of firms, but managerial ownership is negatively associated with firm performance when there is a high percentage of managerial ownership in the firms; the link between firm performance and managerial ownership is non-linear in China and Taiwan.

Hypothesis 15*: Insider ownership has a positive relationship with IPO performance.*

Gu (2003) indicates that state ownership is significantly negatively connected to the short-term IPO performance in China. Chen (2001) indicates that the size of SOE share ownership is negatively associated with corporate performance. According to Li, Wang and Deng (2008), state ownership is negatively associated with the probability of financial distress in China. Yang et al. (2011) indicate that the large percentage of SOE ownership, strong political connections between firms and government, and lack of independent judicial system causing governance mechanisms less effective in China. Chi et al. (2010) find that reducing of SOE ownership reduces the IPOs attractiveness in the long run.

Hypothesis 16: *SOE ownership is negatively associated with IPO performance.*

Chahine (2007) finds that block ownership is negatively associated with firm performance in the short-term in France. Reddy, Locke, Scrimgeour and Gunasekarage (2008) indicate that block ownership has a positive effect on firm performance in New Zealand.

Hypothesis 17: *Block ownership is negatively associated with IPO performance.*

Hypothesis 18: *Non-trading ownership is negatively associated with IPO performance.*

Hypothesis 19: *The percentage of largest ownership is negatively associated with IPO performance.*

Balatbat, Taylor & Walter (2004) and Li, Lam, Qian & Fang (2006) find that institutional ownership is positively associated with IPO performance in Australia and China, but has no significant effect on firm performance in Hong Kong. Pant and Pattanayak (2010) find that domestic institutional ownership has a positive impact on the firm productivity in India.

Hypothesis 20: *Institutional ownership is positively associated with IPO performance.*

Wang (2005) indicates that a curvilinear relationship exists between legal person shareholding and operating performance, and between concentration of non-state ownership and operating performance in China. Levis (2011) finds that private IPOs achieved better operating and market performance when compared to other IPOs in the three years following the public listing in United Kingdom.

Hypothesis 21: Legal person ownership is positively associated with IPO performance.

Gao (2004) indicates that the supervisory boards represent the benefits of small- and medium- shareholders' litigation in China. Xiao et al. (2004) finds that the supervisory board is very important for overseeing the financial condition and monitoring management and the board of directors. According to Li & Wang (2005), the supervisory board's contribution to governance performance is negatively related to the larger shareholder ownership. Li and Wang (2005) also indicate the importance of strengthening supervisory boards. Wang and Liu (2006) believe that the independent directors and supervisory board have complementary advantages in the Chinese governance system. He (2003) and Wen et al. (2003) also support the complementary relationship of independent directors and supervisory boards in China.

Hypothesis 22: Supervisory board size is positively associated with IPO performance.

Hypothesis 23: Supervisor meetings per year is positively associated with IPO performance.

According to Jain and Martin Jr (2005), investment in a high quality audit leads to a significantly lower post-IPO failure rate in the US. Bedaed, Coulombe and Courteau (2008) indicate the independent and experienced audit committee decreases significantly the level of underpricing of IPOs in Canada. According to Li, Wang and Deng (2008), auditor opinion is negatively associated with the probability of financial distress in China. Reddy et al. (2008) indicate that an audit committee has a positive effect on firm performance in New Zealand.

Yu (2011) find that the rating of audit practices is positively related to the stock return-earnings in 22 developed countries.

Hypothesis 24: Audit committee is positively associated with IPO performance.

Hypothesis 25: Remuneration committee is positively associated with IPO performance.

Hypothesis 26: Board committee is positively associated with IPO performance.

5.5 Variables

5.5.1 Dependent Variables

Performance analyses of IPOs have used multiple metrics in measuring IPO performance, such as Tobin's Q, CAR, BHAR, ROA, ROE, and also short-term IPO return, all of which have been discussed in several articles. In this paper, long- and short-term IPO performance are analysed using sustainable yearly abnormal return, long-term Tobin's Q, long-term ROA, and also first day abnormal return, short-term Tobin's Q, and short-term ROA.

Abnormal return is a widely employed metric across different countries and markets and is commonly used for long-term IPO performance, e.g. three years abnormal return, five years abnormal return, or even ten years abnormal return. It is used in developed markets (Ritter, 1991; Jaskiewicz et al., 2005; Goergen et al., 2007; Stevenson, 2006; Ljungqvist, 1997) and developing markets (Cheng et al., 2006; Ghosh, 2005).

This study focuses on the long-term sustainable yearly return during a five-to-ten year period, using panel data to analyse IPO performance. Abnormal yearly return is estimated as:

$$\text{Abnormal Yearly Return} = YSR - [Rf + \beta \times (Rm - Rf)]$$

$$YSR = \frac{P1 - P0 + D1}{P0}$$

where YSR is the yearly stock return, P1 is the current stock price, D1 is the current dividend, and P0 is the last year stock price. Rf is the annually normal interest rate. β indicates the beta

of the company at the current year. Rm (market return) is the yearly return of the major indices in those markets (SSE200, SZSE200, and NZX50).

Short- and longer-term Tobin's Q as the IPO performance measurement is widely used as a dependent variable in the literature (Wilbon, 2003; Reddy et al., 2008). Tobin's Q is computed by dividing the sum of stocks' market value and debt book value by the book value of total assets. Hewa-Wellalage and Locke (2012) indicates that emerging market firms have high Tobin's Q values.

$$Tobin's\ Q = \frac{MV + L/T\ Debt + S/T\ Debt}{Total\ Asset}$$

where MV (the market value) is the result of the company's current stock price and the total number of shares (including non-trading shares in the Chinese stock exchanges). L/T Debt is the book value of long-term liabilities. S/T Debt is the book value of short-term liabilities.

Short- and longer-term ROA as the IPO performance measurement is widely used as a dependent variable in the literature (Carow et al., 2007; Florin, 2005; Ghosh, 2005; Kao et al., 2009; Reddy et al., 2008). ROA is computed by dividing the firm's net income by the book value of total assets.

$$ROA = \frac{Net\ Income}{Total\ Assets}$$

First day abnormal return is widely employed across different countries and markets for short-term IPO performance (Stevenson, 2006; Chahine et al., 2008; Durukan, 2002; Ghosh, 2005; Chen et al., 2000; Kao et al., 2009).

$$Abnormal\ First\ Day\ Return = FDSR - [Rf + \beta \times (Rm - Rf)]$$

$$FDSR = \frac{P1 - P0 + D1}{P0}$$

where FDSR (the first day stock return) is calculated by the capital gain and dividend divided by the previous year's stock price at the current IPO listing date. Rf is the daily normal interest rate at the current IPO listing date. β indicates the beta of the company at the current IPO listing year. Rm (market return) is the current IPO listing date daily return of the major indices in those markets (SSE200, SZSE200, and NZX50).

5.5.2 Explanatory Variables

5.5.2.1 Board

According to the Chinese Company Act (2005) article 45, the board of directors established by a limited liability company shall be composed of 3 to 13 members. According to the Chinese Company Act (2005) article 51, a relatively small limited liability company may have a managing director and no board of directors. According to the Chinese Company Act (2005) article 109, the board of directors established by a limited joint stock company shall be composed of 5 to 19 members.

The managing director may concurrently hold the post of the company manager. If a limited liability company is established by two or more state owned enterprises, the board of directors shall include employee representatives as stated under the Chinese Company Act (2005) article 109. The employees' representatives on the board shall be democratically elected by the employees of the company through the general assembly of the representatives of employees, or other ways. However, this study finds there are very few companies that appoint their grass roots employees as directors.

The chairman and deputy chairman of the board are elected by more than half of all the directors. According to the Chinese Company Act (2005) article 111, the board of directors

shall convene at least two meetings every year. No meeting of the board of directors may be held unless more than half the directors are present. When the board of directors makes a resolution, it will be adopted if more than half of the directors support it.

According to the Securities Law of China article 47, to prohibit insider trading and agency cost problems, where any director, supervisor and senior manager of a listed company, or any shareholder who holds more than 5% of the shares of a listed company, sells the stocks of the company as held within six months after purchase, or purchases any stock as sold within six months thereafter, the proceeds generated will be incorporated into the profits of the relevant company. The board of directors of the company shall withdraw the proceeds.

5.5.2.2 Independent Director

According to the "Establishment of Independent Director Systems by Listed Companies Guiding Opinion"[12], an independent director of a listed company means a director who does not hold any position in the company other than director and who has no relationship with the listed company engaging him or its principal shareholders that could hinder his making independent and objective judgements. An independent director should, pursuant to the requirements of the relevant laws and regulations, the Guiding Opinions and the company's articles of association, conscientiously perform his duties and responsibilities, safeguard the company's overall interests and, in particular, pay attention that the lawful rights and interests of small and medium shareholders are not prejudiced. In principle, an independent director should not simultaneously hold the position of independent director in more than five listed companies.

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[12] Issued by the China Securities Regulatory Commission on 16 August, 2001.

According to the Guiding Opinion, each Chinese listed company should amend its articles of association and engage suitable persons as independent directors. At least one independent director should be a professional accountant with a senior accountant position or have qualifications as a certified accountant. As of 30 June 2002, each listed company should have at least two independent directors on its board. As of 30 June 2003, at least one third of the members of the board of directors should be independent directors.

The term of office of independent directors is the same as for other directors of the listed company. At the expiration of their first term, they may continue to serve as independent directors if reappointed, but the additional time in office may not exceed six years.

5.5.2.3 Information Disclosure

According to Securities Law of China article 65, a company whose shares or bonds have been listed for trading shall, within two months as of the end of the first half of each accounting year, submit to the securities regulatory authority under the State Council and the stock exchange a midterm report indicating the following contents and announce it:

(1) The financial statements and business situation of the company;

(2) Any major litigation involving the company;

(3) The particulars of any change concerning the shares or corporate bonds thereof as already issued;

(4) The important matters as submitted to the general assembly of shareholders for deliberation; and

(5) Any other matter as prescribed by the securities regulatory authority under the State Council.

According to Securities Law of China article 66, a listed company whose shares or bonds have been listed for trading shall, within four months as of the end of each accounting year, submit to the securities regulatory authority under the State Council and the stock exchange an annual report indicating the following contents, and announce it:

(1) A brief account of the company's general situation;

(2) The financial statement and business situation of the company;

(3) A brief introduction to the directors, supervisors, and senior managers of the company as well as the information regarding their shareholdings;

(4) The information on shares and corporate bonds as already issued, including the name list of the top 10 shareholders who hold the largest numbers of shares in the company as well as the amount of shares as held thereby;

(5) The actual controller of the company; and

(6) Any other matter as prescribed by the securities regulatory authority under the State Council.

5.5.2.4 Audit Committee

Audit committees are responsible for the internal accounting control, financial statements and other matters of financial supervision. The committees are special institutions established by the board of directors, whose major responsibilities include the communication between internal and external auditing, monitoring and verification of company performance. The audit committee is composed of three directors, two independent and one executive director. The audit committee's main goal is to provide effective financial reporting, and control, identify, and manage all factors of financial status.

All variables and explanations are reported in Table 5.1.

Table 5.1 Dependent, independent and control variables

Variable Code	Variable Explanation
Dependent	
IR	First day abnormal return, which is the first day return of IPO minus the current day market return
Yearly Return	Yearly abnormal return, which is the yearly return of IPO minus the current year market return
Tobin's Q	Sum of equity market value and liabilities book value over sum of equity book value and liabilities book value for one year
ROA	Return on asset
Independent	
MDA	CEO age
MDG	CEO gender
MDQ	CEO qualifications, 1 indicates bachelor degree, 2 indicates master degree, 3 indicates MBA, and 4 indicates PhD, 0 otherwise
MDE	CEO experience, which is years of working experience as CEO in the current firm
Top Three Officer Pay	Sum of salaries for top three officers (only for China)
MDP	Salary of CEO (only for NZ)
MDSC	CEO duality, dummy of whether CEO separate from chairperson, 0 indicates same person
BOE	Experience of chairman, which is years of working experience as chairman in the current firm
CMQ	Chairman qualifications, 1 indicates bachelor degree, 2 indicates master degree, 3 indicates MBA, and 4 indicates PhD in business, 0 otherwise.
BOS	Number of directors
OBO	Percentage of independent directors
BOF	Number of female directors
SOS	Number of supervisors (only for China)
MPY	Number of board meetings per year
MPYS	Number of supervisors meetings per year (only for China)
BH	Dummy of block holder existence, 1 indicates the firm has block holder which is/are holding more than 5% shares
MOS	Percentage of insider ownership
SOE	Percentage of state ownership (only for China)
LP	Percentage of legal person ownership (only for China)
IS	Percentage of institutional ownership
US	Percentage of non-trading shares (only for China)
LSH	Percentage of largest shareholding
BOC	Dummy of 1 indicates board committee existence (only for NZ)
RC	Dummy of 1 indicates remuneration committee existence (only for NZ)
IA	Dummy of 1 indicates independent audit existence (only for NZ)
NOC	Number of committees (only for China)
Control	
Size	Total sales per year
Beta	Beta of the company for the current year (only for China)
Labour	Number of employees (only for China)
PCL	Percentage change of listing number of IPOs per year (only for China)
PCC	Percentage change of market capitalization per year (only for China)
PCTV	Percentage change of market trading volume per year (only for China)
PCA	Percentage change of trading accounts per year (only for China)
PCAS	Percentage change of A-Shares listings per year (only for China)
PCPE	Percentage change of market P/E ratio per year (only for China)
Industry	Dummy of 1 indicates the IPO belongs to industry
Commercial	Dummy of 1 indicates the IPO belongs to commercial
Property	Dummy of 1 indicates the IPO belongs to property

Public Service	Dummy of 1 indicates the IPO belongs to public service
Composite	Dummy of 1 indicates the IPO belongs to composite
1999	Dummy of 1 indicates the IPO listed in year 1999
2000	Dummy of 1 indicates the IPO listed in year 2000
2001	Dummy of 1 indicates the IPO listed in year 2001
2002	Dummy of 1 indicates the IPO listed in year 2002
2003	Dummy of 1 indicates the IPO listed in year 2003
2004	Dummy of 1 indicates the IPO listed in year 2004

5.6 Model Analysis

5.6.1 Description of variables

The first step summarizes the variables and describes the observation, mean, standard deviation, skewness, and kurtosis of observations. As explained in the data section of this study, some of the variables are hand collected from NZX Deep Archive website; those datasets have not been cleaned and corrected by professionals. It is very important to describe the variables, find out how many observations are missing and which variables have infrequent extreme outliers. The study uses missing data and outliers fixed theories to fix those problems. For real numeric variables, viz salary, sales, number of directors, age, experience, etc., this study uses their log values to replace the original values.

Descriptive statistics for the three markets to be analysed provide guidance concerning the size, distribution and assumption of normality, potential impact of outliers and counts of missing values.

When considering the descriptive statistics for the three markets, consideration is given to the observations, mean, median, standard deviation, minimum, maximum, skewness, and kurtosis.

5.6.2 Correlation Test

The correlation of dependent, independent and control variables are investigated using Stata. In this study, we assume two independent variables are highly correlated with each other if the absolute value of their correlation is larger than 0.6. In this study, one of the two variables may be dropped from the estimation process as necessary.

5.6.3 Normality Test

Normality is tested to ensure variables are likely to be random and normally distributed. The study tests the skewness and kurtosis of the variables again by Jarque-Bera test. Skewness is a measurement of asymmetry of the probability distribution of a variable. A positive skewness indicates that the probability of variables existing in the right side is higher than in the left side. A negative skewness indicates that the probability of variables existing in the left side is higher than in the right side. Both positive and negative skewnesses indicate the values are not well randomly. Kurtosis is another measurement of dataset; higher kurtosis indicates infrequent extreme values or outliers exist in the variables. Both skewness and kurtosis tests are important for the study to find out how those variables may affect the analysis. A Jarque-Bera test determines whether those variables have the skewness and kurtosis to match a normal distribution. For the short-term case, if necessary, we use a histogram graph to test whether distributions are normal.

5.6.4 Poolability Test

The poolability test is undertaken under the assumption of

$\mu - N(0, S^2 I, VT)$

This test uses the F statistic:

$$Fobs = \frac{(e'e - \sum ei'ti)/(n-1)K}{\sum ei'ei/n(T-K)} \sim F[(n-1)K, n(T-K)]$$

Where e'e is the sum of squared residuals (SSE) of the pooled OLS and e'ei is the SSE of the OLS regression for group i. If the null hypothesis is rejected, the panel data are not poolable.

5.6.5 Heteroskedasticity Test

From the ordinary least square (OLS) estimation assumption, the error term must be homoscedastic; in other words, the variance of the error term must be constant, and each error term observation comes from the same probability distribution. Heteroskedasticity is the absence of homoscedasticity. Heteroskedasticity is a common problem that occurs in a cross-sectional dataset; when heteroskedasticity is present the error term observation comes from the different probability distributions (Halcoussis, 2005). In this study, most regressions use panel data but it is appropriate to test for heteroskedasticity. According to Halcoussis (2005), heteroskedasticity makes the error term of the OLS estimation too small, and also makes the t-statistics value of the estimate too large. If heteroskedasticity is present, then OLS is no longer unbiased. There are many tests for heteroskedasticity, the two common and classic tests being the Park test and the White test. This study employs the Wald test approach, which is the panel data heteroskedasticity test recommended by Stata. Where heteroskedasticity is present, the study will employ generalized least-squares (GLS) estimation. If there is no heteroskedasticity, then the study will employ OLS estimation. Dynamic panel generalized method of moments (GMM) estimation is the potential method if both heteroskedasticity and endogeneity are present, consistent with previous corporate governance study literature.

5.6.6 Multicollinearity Test

When two or more independent variables are highly correlated in linear fashion multicollinearity exists. The study investigates variables in the dynamic panel data using Arellano-Bond regression, and tests the effect of each independent variable on the dependent variables. Arellano-Bond regressions are also very useful to test whether those variables have a multicollinearity problem. If variables have multicollinearity, we will delete them.

5.6.7 Endogeneity Test

Endogeneity arises when two or more variables are jointly determined in the behavioural model. This occurs naturally in the context of a simultaneous equations model, such as a supply-demand system in economics, where price and quantity are jointly determined in the market for that good or service. The study will employ the Durbin-Wu-Hausman (DWH) test to test whether endogeneity exists. When the study runs those independent variables by groups separately, variables from other groups will become the potential endogeneity (instrument) variables for the regressions. Then the study tests the effect of independent and control variables on dependent variables by GLS and dynamic GMM estimation linear regression models (Hewa-Wellalage, 2012; Fauzi, 2013).

5.6.8 GLS/Dynamic GMM estimation linear regression models with robust test

As recounted in the data section, there are 26 potential independent variables and 20 potential control variables available for the regressions. Many variables in the same regression will cause some econometric problems, such as multicollinearity; those problems may affect the explanatory power of the study. As many independent variables have been selected, the study groups those variables, and applies them separately into regressions with control variables. Board composition are discovered and investigated by many prior studies (Callen, Klein, and

Tinkelman, 2003; Chabotar, 1989; Chaganti and Sharma, 1985; de Andres, Azofra, and Lopez, 2005; Erhardt, Werbel, and Shrader, 2003; Kang, Chen, and Gray, 2007; Kiel and Nicholson, 2003; Reddy, Locke, and Fauzi, 2013; Rose, 2007; Sheridan and Milgate, 2005; Wan and Ong, 2005; Zahra and Pearce, 1989). Board composition is constituted by five groups of governance variables, including board size, board demographics, board leadership, board education, and board evaluation. Another potential benefit of grouping is where endogeneity exists. If this study tests independent variables by separate groups, variables from other groups will become the potential instrument variables for the current group's regression. Board size variables include number of directors, percentage of independent directors, number of supervisors, number of committees, dummy of board committee, dummy of independent audit committee, dummy of remuneration. Board demographics variables include CEO gender, CEO age, and number of female directors. Board leadership variables include CEO duality, percentage of insider ownership, percentage of state ownership, percentage of legal person ownership, percentage of un-trading ownership, percentage of institutional ownership, percentage of largest shareholding ownership, and dummy of block holder existence. Board education variables include CEO qualification and chairman qualification. Board evaluation variables include CEO experience, chairman experience, CEO salary, top three officers' salaries, board meetings per year, and supervisors meetings per year. After testing those variables by different board compositions, the study employs all variables into a single regression.

Gender, separation, block holder existence, board committee, remuneration committee, and independent audit will be investigated through the use of dummy variables in the regression models.

$$Y = \alpha + \beta_{i-n} * X_{i,t} + \varepsilon \qquad\qquad (1)$$

Where

Y = dependent variables, viz abnormal first day return, abnormal yearly return, Tobin's Q, or ROA.

X_{it} = independent variables and control variables in ith firm and t time.

B_{i-n} = parameters to be estimated.

ε = error term with zero mean.

The regression analysis starts with a GLS or dynamic GMM on the original panel data and the data after adjustment for missing data and outliers. The following regressions indicate the regressions including all independent and control variables.

Short Term:

$IP = constant + \beta_1*MDA_1 + \beta_2*MDG_2 + \beta_3*MDQ_3 + \beta_4*MDE_4 + \beta_5*Top$ three officers pay_5 $+\beta_6*MDP_6 +\beta_7*MDSC_7 +\beta_8*BOE_8 +\beta_9*CMQ_9 +\beta_{10}*BOS_{10} +\beta_{11}*OBO_{11} +\beta_{12}*BOF_{12}$ $+\beta_{13}*SOS_{13} + \beta_{14}*MPY_{14} + \beta_{15}*MPYS_{15} + \beta_{16}*BH_{16} + \beta_{17}*MOS_{17} + \beta_{18}*SOE_{18}$ $+\beta_{19}*LP_{19}+\beta_{20}*IS_{20} +\beta_{21}*US_{21} +\beta_{22}*LSH_{22} +\beta_{23}*BOC_{23} +\beta_{24}*RC_{24} +\beta_{25}*IA_{25} +\beta_{26}*NOC_{26}$ $+\beta_{27}*$control variables (sales, beta, number of employees, industries, listing years, % of market factors' change)$_{27}$ + error   (2)

Where IP = IPO performance measured by abnormal first day return, Tobin's Q and ROA.

Long Term:

$IP = constant + \beta_1*MDA_1 + \beta_2*MDG_2 + \beta_3*MDQ_3 + \beta_4*MDE_4 + \beta_5*Top$ three officers pay_5 $+\beta_6*MDP_6 +\beta_7*MDSC_7 +\beta_8*BOE_8 +\beta_9*CMQ_9 +\beta_{10}*BOS_{10} +\beta_{11}*OBO_{11} +\beta_{12}*BOF_{12}$ $+\beta_{13}*SOS_{13} + \beta_{14}*MPY_{14} + \beta_{15}*MPYS_{15} + \beta_{16}*BH_{16} + \beta_{17}*MOS_{17} + \beta_{18}*SOE_{18}$ $+\beta_{19}*LP_{19}+\beta_{20}*IS_{20} +\beta_{21}*US_{21} +\beta_{22}*LSH_{22} +\beta_{23}*BOC_{23} +\beta_{24}*RC_{24} +\beta_{25}*IA_{25} +\beta_{26}*NOC_{26}$ $+\beta_{27}*$control variables (sales, beta, number of employees, industries, listing years, % of market factors' change)$_{27}$ + error   (3)

Where IP = IPO performance measured by abnormal yearly return, Tobin's Q and ROA.

5.6.9 Specification Test

It is important to ensure the proposed models have the highest level of explanatory power possible. Various specification problems can arise relating to general specification, autocorrelation, over identification, and joint significance. There are carefully addressed and as result the estimated relationships are superior to those in prior research where such checking has not been undertaken. Hausman (1978) introduces a class of specification tests, which make use of the difference between parameter estimates which impose and do not impose a null hypothesis. According to Hausman and Taylor (1980), the specification test examines the effect of imposing the restrictions on the estimator. The parametric restriction is important for improving the estimator by removing irrelevant variables and retaining only relevant variables.

5.6.9.1 Autocorrelation Test

An autocorrelation, also referred to serial correlation, occurs when the error term ε_{it} observations in a regression are correlated. Autocorrelation is a common problem in time-series regressions and often found in repeating patterns when the past values effect the future values. In this study, most regressions use panel data and for consistent estimation, the panel data estimators require that ε_{it} be uncorrelated. The study examines autoregressive level 1 and autoregressive level 2 statistics to test the first and second order correlation. To be confident ε_{it} is not serially correlated it is important that both first and second order test statistics are satisfactory.

5.6.9.2 Over Identification Restriction Test

Where GMM is the more appropriate method of estimation an over identification restriction test is important as it provides the parameters of the model. In a GMM model, if the number

of moment conditions is greater than the parameters to be estimated, then the model is likely to be over identified. Over identification tests are often referred to as Hansen's test (Hansen, 1982), Sargan's test (Sargan, 1958), and Hansen-Sargan test.

5.6.9.3 Joint Significance Test

When GLS or GMM methods are used it is important to establish the explanatory power of the independent and control variables. The joint significance test is to establish whether some variables can be omitted. The Wald test is a classic statistical test with a great variety of uses and according to Agresti (1990), Agresti (2002) and Polit (1996), the Wald test is useful to establish the explanatory power of a group of explanatory variables. If the joint significant test is significant then those variables have exploratory power and all of them can be used in the regression.

5.7 Conclusion

This chapter presented the research framework, conceptual framework and hypotheses. Explanations of the variables and a list are also given. The analytic models and specification tests are introduced. The next chapter explains the data selection of the study.

CHAPTER 6 DATA

6.1 Overall

The previous chapter presented the hypotheses, variables, analytic models and specification tests for this study. Data are drawn from Shanghai, Shenzhen, and New Zealand stock exchanges, covering the IPOs listed from 1999 to 2004. The cut–off date of 2004 permits a minimum five years of sourced post-listing data to be used in calculating returns through to 2009. The data are from public domain records and subscriber databases. Specifically, from the websites of the three stock exchanges, NZX Deep Archive, CSMAR database and individual companies' annual reports. The data is compiled as panel data.

The analysis addressed both long-term and short-term time periods. Tobin's Q, ROA, and yearly return are the dependent variables of the regression that indicate the long-term IPO performance. First day return, ROA, and Tobin's Q are the dependent variables in the regression relating to short-term IPO performance.

The study considered a range of independent variables guided by prior research. CEO gender, qualifications, CEO experience in the company, CEO separation from chairperson, chairperson qualifications and experience, number of directors, number of female board members, percentage of independent directors, directors meetings per year, percentage of insider ownership and largest shareholder ownership. These eleven variables are the common independent variables for all markets. Block holder ownership, management term ownership, institutional ownership, dummy of board committee, dummy of remuneration committee, and dummy of independent audit existence are only available for New Zealand database. CEO age, top three officers' pay, the number of supervisors, supervisors' meeting frequency, SOE

ownership, legal person ownership, shares not for trading, and number of committees are only available for Chinese stock exchanges. Different variables are selected for three reasons. First, there are some variables unique to China; variables related to supervisors are not available in New Zealand. Second, some independent variables may be important for one market but not others. For example, the dummy variable block holder ownership is important to indicate the share dispersion in New Zealand, but does not work in China because every Chinese company has somebody who owns more than 5% of shares. Many Chinese companies have SOE ownership, which is not common in New Zealand. The third reason is data limitation. We collected those variables from two databases, and some variables are only available in one database and not in the other.

Table 6.1 Variables available cross all markets

Variables	New Zealand	Shanghai	Shenzhen
MD Age		Available	Available
MD Gender	Available	Available	Available
MD Qualification	Available	Available	Available
MD Experience	Available	Available	Available
MD Salary	Available		
Top Three Officer Pay		Available	Available
CEO Duality	Available	Available	Available
Chairman Experience	Available	Available	Available
Chairman Qualification	Available	Available	Available
Number of Directors	Available	Available	Available
Independent Director Percentage	Available	Available	Available
Female Director Number	Available	Available	Available
Number of Supervisors		Available	Available
Board Meeting per Year	Available	Available	Available
Supervisors Meeting per Year		Available	Available
Block Holder Existing	Available		
Institutional Shareholding	Available		
Insider Shareholding	Available	Available	Available
SOE Shareholding		Available	Available
Legal Person Shareholding		Available	Available
Non-trading Shareholding		Available	Available
Number of Committees		Available	Available
Board Committee	Available		
Remuneration Committee	Available		
Independent Audit	Available		
Largest Shareholding	Available	Available	Available
Size	Available	Available	Available
Beta		Available	Available
Labour		Available	Available
Market Related Variables		Available	Available
Industries	Available	Available	
Years of listings	Available	Available	Available

Table 6.1 indicates the independent and control variables available in the three markets.

Additional information relating to governance, compared to that in New Zealand, is available

in the Chinese databases. Further independent variables can therefore be tested for statistical

significance. CEO age is potentially important for China given a continuing general

reverence given to older people who are viewed as having acquired more wisdom. This may

also explain why all presidents of the Communist Party in China have been over 60 years of

age. The majority of Chinese companies do disclose age which differs from New Zealand where such details are viewed as personal and not published.

The CEO salary is not available from the CSMAR database. However, the salaries of the top three are available and can be used as a proxy variable for CEO salary.

In China there is a position contributing to corporate governance known as supervisors. Listed companies are required to establish a board of supervisors, consisting of not less than three members, which must meet at least every six months. Supervisors have a term of three years which may be renewed. The roles of supervisors entail five main responsibilities. First, supervisors are responsible for supervising directors and management and ensuring their behaviour has not violated any laws, regulations and the articles of association of the company and the resolution of the shareholders' assembly. Second, they are responsible for the inspection of financial status and other accounting documents. Third, they are responsible for checking the accounting reports, business reports, profit distribution and financial data that boards of directors submit to the shareholders' meetings. Fourth, they have the right to access company management and put forward suggestions. Fifth, they are responsible for the resolution of the shareholders' meetings and commitment to their job is comprehensive and responsible. As mentioned in section 5.5.2, supervisors play a key role. The number of meetings each year may represent the supervisory effort expended.

Two significant parties that own corporate shares in China are SOEs and legal persons. Corporate legal persons are defined by "People's Republic of Enterprise Legal Person Registration Regulations" and "Republic of China Company Registration"; the individuals and organizations refers to the national law with the amount of money, business name,

articles of association, organization, address and other statutory requirements, ability to independently bear civil liability, approved and registered by the competent authorities to obtain legal personality. In many corporates, SOEs and legal persons own more than 60% of shares. This study expected a highly correlation between SOE and legal person ownership variables, as government officers are the legal persons of many of listed companies. Accordingly, the non-traded share percentage may become important.

The CSMAR database does not provide information on key board committees, e.g., audit committee by name or members. However, the number of committees is signalled and these range between 1 – 4. Industry factor and sale is the common control variable for all markets. Beta and labour information is only available from the CSMAR database; beta and labour information for New Zealand listed companies are not available from existing databases.

Missing data raises a number of issues. Some NZ IPO governance variables are collected from annual reports and in some instances the required information is missing. Tables 1, 2, and 3 indicate the number of total observations and the number of missing observations for each variable in New Zealand, Shenzhen and Shanghai. Many missing observations could highly affect the analysis results, so those variables with high numbers of missing observations from the regressions have been ignored.

There were 105 New Zealand IPOs listed from 1999 to 2004. Corporate governance information is not available from NZX Deep Archive and other websites for 23 IPOs, which leaves 82 IPOs in the sample. They include 61 surviving and 21 delisted companies, which results in 542 observations. There are 494 observations to test long-term IPO performance, and 82 observations to test short-term IPO performance. The long-term performance and

governance data are compiled as unbalanced panel data, and the short-term performance and governance data are compiled as cross-sectional data. All observations are reported in Table 6.2.

Table 6.2 Number of Missing Observations of Dependent and Independent Variables in New Zealand

	Long Term	**Short Term**
Total Observations	494	82
Name of Variables	**Missing Observations**	**Missing Observations**
First Day Initial Return	n/a	0
Yearly Return	0	n/a
ROA	1	0
Tobin's Q	0	0
MD Gender	0	6
MD Qualification	233	37
MD Experience	26	6
MD Salary	111	27
MD Separation	25	6
Chairman Experience From Listing	2	2
Chairman Qualification	192	33
Number of Directors	3	4
Independent Director Percentage	18	5
Female Director Number	15	5
Board Meeting per Year	234	48
Block Holder Existing	10	9
Institutional Shareholding	12	10
Insider Shareholding	22	13
Board Committee	23	6
Remuneration Committee	23	6
Independent Audit	5	3
Largest Shareholding	11	10

In the New Zealand case, Tobin's Q is the only variable which has no missing observations. Both the financial dependent variables, namely ROA and Tobin's Q, are calculated from the accounting statements provided in companies' annual reports and NZX Deep website. There are some serious abnormal values in those variables, for example, a value of 1900% in yearly return, a value of 105.89 in Tobin's Q, a value of 4545.45 in D/E ratio, and other odd values, which impact the results of regression analysis.

In Shenzhen, 142 IPOs have been post listed from 1999 to 2004. All corporate governance variables are available from the CSMAR database. In Shenzhen's case, this includes 140

surviving and two delisted companies, which results in 542 observations. There are 1,139 observations to test the long-term IPO performance, and 142 observations to test the short-term IPO performance. The long-term performance and governance data are compiled as unbalanced panel data, and the short-term performance and governance data are compiled as cross-sectional data. All observations are reported in Table 6.3.

Table 6.3 Number of Missing Observations of Dependent and Independent Variables in Shenzhen

	Long Term	Short Term
Total Observations	1139	142
Name of Variables	**Missing Observations**	**Missing Observations**
First Day Initial Return	n/a	0
Yearly Return	0	n/a
ROA	0	0
Tobin's Q	56	4
MD Age	2	1
MD Gender	1	1
MD Qualification	277	51
MD Experience	1	1
Top Three Officer Salary	50	63
MD Separation	0	0
Chairman Experience	0	0
Chairman Qualification	260	49
Number of Directors	0	0
Independent Director Percentage	1	1
Female Director Number	0	0
Number of Supervisors	2	1
Board Meetings per Year	52	85
Supervisor Meetings per Year	52	85
Insider Shareholding	22	0
SOE	0	0
Legal Person	0	0
Non-trading	0	0
Number of Committees	0	7
Largest Shareholding	0	0

In Shanghai, 409 IPOs have been post-listed from 1999 to 2004. All corporate governance variables are available from the CSMAR database. In Shanghai's case, this includes 404 surviving and five delisted companies, which results in 3218 observations. There are 2,966 observations regarding long-term IPO performance, and 409 observations regarding short-term IPO performance. The long-term performance and governance data are compiled as

unbalanced panel data, and the short-term performance and governance data are compiled as cross-sectional data. All observations are reported in Table 6.4.

Table 6.4 Number of Missing Observations of Dependent and Independent Variables in Shanghai

	Long Term	Short Term
Total Observations	2966	409
Name of Variables	**Missing Observations**	**Missing Observations**
First Day Initial Return	n/a	0
Yearly Return	0	n/a
ROA	0	0
Tobin's Q	140	8
MD Age	12	1
MD Gender	10	1
MD Qualification	722	117
MD Experience	11	1
Top Three Officer Salary	93	84
MD Separation	8	1
Chairman Experience	2	0
Chairman Qualification	718	127
Number of Directors	0	0
Independent Director Percentage	0	0
Female Director Number	0	0
Number of Supervisors	1	0
Board Meetings per Year	47	86
Supervisor Meetings per Year	50	84
Insider Shareholding	0	0
SOE	0	0
Legal Person	0	0
Non-trading	0	0
Number of Committees	249	12
Largest Shareholding	0	0

Unlike the NZSE study, missing variables and outlier variables are not a major problem for the Chinese cases. Chinese IPO governance variables are provided by the CSMAR database, and have been investigated by many researchers. But there are still some missing variables across observations.

6.2 Outliers and Missing Data

Outliers and missing data are a problem in New Zealand's case. Some of the governance variables collected from company annual reports has missing observations. Consequently, five variables are omitted from the regressions. There are also some missing variables across

observations in the Chinese cases. For some variables there are occasional observations missing and to compensate, various statistical processes are used.

Missing data

Three ways to deal with missing data appear to be commonly used. The first is to do nothing, which means leaving the original data with the missing value in place. This is a common approach.

The second approach is to delete those cases with missing values, which means deleting all cases where there is a missing observation. The current sample includes 82 IPOs and 542 observations. The long-term performance and governance data are compiled as unbalanced panel data, and the short-term performance and governance data are compiled as cross-sectional data. The dataset includes three dependent and 18 independent variables; almost every variable has a small amount of missing data. The sample would contain very few observations if case-wise deletion were to be used.

The third approach is to replace the missing values with an imputed value. The most common imputation is to use the mean or median value of the variable to replace missing values. Twisk and de Vente (2002) suggest several longitudinal imputation methods, such as last value carried forward and linear interpolation. The last value carried forward method assumes that the variable is constant over a short period. For example, impute the missing value at time t with the available value at time t+1. Linear interpolation imputation is the method that replaces the missing value with the average value of the previous and next available value. For example, impute the missing value at time t with the average value of the available value

at time t-1 and t+1. The study selected the third approach, which is to replace the missing values with an imputed value, because less than 10% of values are missing.

Outlier

Several methods have been proposed in prior research to test whether or not a single or series of values is an outlier.

(1). The first method is to find the upper quartile value (UQ) and the lower quartile value (LQ) of the variable and then calculate the difference (D) between them.

D = UQ - LQ

If a value is 1.5*D greater than the UQ or 1.5*D lower than LQ, it is defined as an outlier.

(2). An outlier may also operationally be defined as a value at least three standard deviations above or below the mean of the variable.

(3). The third method is also to find the upper quartile value (UQ) and the lower quartile value (LQ) of the variable, and then calculate the difference (D) between them.

D = UQ - LQ

If a value is 3*D greater than the UQ or 3*D lower than LQ, it defines as outlier.

(4). If the value is larger or smaller than 99% confidence level, it is an outlier.

The current study tests method three to access the respective impact on the data.

6.3 Data Transformation

Outliers may cause the distribution of variables to exhibit a non-normal distribution. A data transformation method may resolve this problem. Three common data transformation methods are a square root transformation, log transformation, and inverse transformation. The square root transformation takes the square root of every value of a variable but it cannot take the square root of a negative value. In this study, there are many variables with negative observations, e.g. yearly return, ROA and ROE. The square root transformation is rejected as

inappropriate for this study. Inverse transformation takes the inverse of a value, for example, to take the inverse of 10 to compute 1/10. It results in small numbers becoming relatively large and large numbers becoming small. This was found not to be helpful for the current study. Log transformation requires computation of the logarithm value of the variables. Other transformations noted in the literature include pruning the top and bottom 5% value and then ignoring the outlier samples or replacing those outlier values by the mean or median of the current variable. This study uses log transformation to deal with several independent and control variables; namely salary, sales, and labour.

6.4 Conclusion

To process, the current study tests the outliers by histograms first and then uses median imputation, last value carried forward imputation and linear interpolation imputation to replace missing and outlier values. If the dataset is non-normal after these tests, log transformation may be used to resolve this issue.

CHAPTER 7 CORPORATE GOVERNANCE IMPACT ON IPO PERFORMANCE: SHANGHAI STOCK EXCHANGE

7.1 Introduction

Previous chapters offered information on the methodology and data for this study. This chapter presents the descriptive statistics, econometric tests and the empirical results and findings about the relationship between corporate governance mechanisms and the short and long term performance of IPOs on the Shanghai Stock Exchange.

Section 2 provides a discussion of the descriptive statistics and normality test results of the original and transformed variables. Section 3 provides the results of correlation tests. Section 4 provides the results of heteroskedasticity tests, multicollinearity tests, autocorrelation tests, and linearity tests. Section 5 provides the results of endogeneity tests. Section 6 provides the results of long-term OLS/GLS/Dynamic GMM tests. Section 7 provides the results of long-term specification tests. Section 8 provides the results of short-term OLS/GLS tests. Section 9 provides the results of short-term specification tests. Section 10 provides the conclusion of chapter 7.

7.2 Descriptive and Normality Analysis

The data sample includes 409 IPOs post-listed on the SSE from 1999 to 2004. There are 2,966 observations regarding long-term IPO performance and governance mechanisms which are compiled as unbalanced panel data. There are 409 observations regarding short-term IPO performance and governance mechanisms and these are compiled as cross sectional data. This section gives the key descriptive statistics of the original sample, including the number of observations, mean, median, standard deviation, minimum and maximum. The section also

provides the results of normality tests, which indicate skewness and kurtosis. The sample includes three dependent variables, 20 independent variables and 20 control variables. The sample also includes eight variables that are transformed to log values: two dependent variables, four independent variables, and two control variables.

Descriptive statistics for the three markets to be analysed provide guidance concerning the size, distribution and assumption of normality, potential impact of outliers and counts of missing values. When considering the descriptive statistics for the three markets, consideration is given to the observations, mean, median, standard deviation, minimum, maximum, skewness, and kurtosis. Descriptive statistics are important for this study for four reasons. First, the study selected three markets so it is important to provide the differences between markets and find out the potential reasons for the differences. This chapter does not just provide the key statistics for the Shanghai market. A comparison between the Shanghai and the other two markets and findings from the literature are also reported. Second, descriptive statistics are important in providing key information for every variable. For example, the mean of abnormal yearly return is 0.1606, well above 0. From that number, the study concludes the sample IPOs' longer-term performances are well above other IPOs in the same market. Third, descriptive statistics helps to find the outliers by minimum and maximum values of variables. For example, the maximum value of Tobin's Q is 20.8233, which is most likely an outlier, and the study addresses the outlier; otherwise the outlier will affect the regression results. Finally, descriptive statistics give the normality test results. If the absolute values of skewness and kurtosis values are too high, the study will use logarithm values as the potential replacement for the original values.

7.2.1 Long-Term Data Descriptive Statistics

7.2.1.1 Descriptive Statistics of Long-Term Sample

The distribution of each variable was checked to ensure if it was approximately normal by median, standard deviation, skewness and kurtosis. The risk is those missing values and outliers will significantly affect the sample data. The study will provide the descriptive statistical of variables after fixing missing values and outliers in the Table 7.1. From the results, all variables offered normally-distributed skewness and minimal kurtosis.

Table 7.1 Summary of Dependent and Independent Variables Descriptive Statistics

Variable	Obs.	Mean	Median	Std.Dev.	Min	Max	Skewness	Kurtosis
Log Yearly Return	2966	0.301	0.302	0.143	-0.449	0.820	-0.133	6.506
Tobin's Q	2966	1.950	1.589	1.078	0.547	5.753	1.717	5.868
ROA	2966	0.035	0.034	0.053	-0.133	0.195	-0.616	5.744
Log MD Age	2966	1.658	1.653	0.062	1.431	1.875	-0.076	3.028
MD Gender	2966	0.038	0.000	0.192	0.000	1.000	4.802	24.058
MD Qualification	2966	1.183	1.000	0.837	0.000	4.000	0.958	4.793
MD Experience	2966	2.684	2.000	2.375	0.000	13.000	0.914	3.380
Log Pay	2966	5.727	5.739	0.398	4.176	7.383	-0.011	3.525
MD Duality	2966	0.873	1.000	0.333	0.000	1.000	-2.243	6.031
Chairman Experience	2966	3.192	3.000	2.568	0.000	16.000	0.808	3.295
Chairman Qualification	2966	1.239	1.000	0.897	0.000	4.000	1.008	4.626
Log Number of Directors	2966	0.977	0.954	0.095	0.301	1.279	-0.110	5.292
Independent Director Percentage	2966	0.327	0.333	0.092	0.000	0.750	-1.956	8.579
Female Director Number	2966	1.025	1.000	1.004	0.000	5.000	0.866	3.356
Number of Supervisors	2966	4.208	3.000	1.600	0.000	13.000	1.405	5.476
Log Board Meeting per Year	2966	0.883	0.903	0.163	0.301	1.556	0.100	3.419
Supervisors Meeting per Year	2966	3.881	4.000	1.728	1.000	16.000	0.980	6.163
Insider Shareholding	2966	0.022	0.000	0.107	0.000	1.000	6.253	46.921
SOE Percentage	2966	0.305	0.315	0.266	0.000	0.850	0.124	1.489
Legal Person Percentage	2966	0.189	0.055	0.233	0.000	0.880	0.950	2.534
Non-trading Percentage	2966	0.517	0.572	0.205	0.000	0.908	-1.104	3.594
Number of Committees	2966	3.036	4.000	1.633	0.000	7.000	-1.108	2.622
Largest Shareholding	2966	0.417	0.411	0.167	0.045	0.852	0.114	2.136

There are key descriptions for all dependent and independent variables after fixing for missing data and outliers as shown in Table 7.1. Abnormal yearly return includes 2966 observations and there is no missing value. The mean is 0.1606, which is significantly above 0. This indicates IPOs' longer-term performances being well above IPOs listed before 1999

and after 2004. The median is 0.0024. The standard deviation is 0.8292 which is not large. The abnormal return range is from -1.6435 to 8.3592, suggesting that some IPOs have very active trading in the stock. The log abnormal yearly return also includes 2966 values. The mean is 0.3010, the median is 0.3016, and the standard deviation is 0.1427. The standard deviation is very low. The range is from -0.4488 to 0.8203. The skewness is -0.1333 and the kurtosis is 6.5056. Table 7.1 also presents the mean, median, standard deviation, minimum, maximum, skewness, and kurtosis values for the entire long-term dependent and independent variables.

The mean of Tobin's Q is 1.9504, which is significantly above 1, indicating the market values of listed firms are far above the underlying asset values, and it is more likely their stock prices are irrationally high and overvalued. The mean of ROA is 0.0347. The value indicates that most listing Chinese firms are just surviving. The mean managing director age is 45.91; the value indicates that Chinese CEOs are relatively young compared with top government officials. The median age is 45 with the youngest CEO aged 27 and the oldest 75. The data show those CEOs who are less than 30 years old all have at least a bachelor degree and none of them have duality as chairman. A most likely explanation for this result is that those relatively younger CEOs are from family-owned companies and they are working as CEO under older generation supervision. The mean of managing director qualifications is 1.1834; indicating that the average qualification of CEOs is higher than a bachelor degree. The mean of managing director experience is 2.6841. It shows most CEOs do not stay in their positions for a long time. For many state owned companies, their CEOs are appointed by local governments every three to five years.

The top three officers' salaries include 2874 observations and there are 92 missing values. The mean is RMB832079.6[13] per year, which is nine times the average income in China. The median is RMB554550. The value range is from 15000 yuans to 24.2 million yuans. Some top level managers are only earning the basic salaries from their firms, as they hold more than one position, being both CEO and government official. The mean of the female director number is 1.0253, the median is 1 and the standard deviation is 1.0044. This indicates that on average there is only one female director out of every ten directors in Chinese firms. The mean of supervisors meetings per year is 3.8813 and the median is 4. The value range is from 1 to 16; some supervisors are just meeting once a year.

Compared with the statistics before data transformation, Tobin's Q, log of CEO age, CEO gender, CEO qualification, CEO experience, log of pay, CEO duality, chairman experience, chairman qualification, number of supervisors, log board meeting per year, supervisors meeting per year, and number of committees have been updated by filling the missing values. The outliers for abnormal yearly return, log of abnormal yearly return, Tobin's Q, ROA, and log of ROA had been removed and given replacements. After all, abnormal yearly return, log of abnormal yearly return, Tobin's Q, ROA, log of ROA, log of CEO age, CEO gender, CEO experience, and chairman qualification provided more normal variants.

7.2.1.2 Long-Term Control Variables Descriptive Statistics

The distribution of each variable was checked to ensure it was approximately normal by median, standard deviation, skewness, and kurtosis. The risk is those missing values and outliers significantly affect the sample data. The study will provide the descriptive statistics

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[13] RMB832079.6 = 160015NZD, or 53339.44 NZD per person. China income per capita is MB31418.4 per year in 2011, or 6042NZD.

of variables after fix missing and outliers in Table 7.2. From the results, all variables offered

normally distributed skewness and also minimal kurtosis.

Table 7.2 Summary of Control Variables Descriptive Statistics

Variable	Obs.	Mean	Median	Std.Dev.	Min	Max	Skewness	Kurtosis
Log Size	2966	9.328	9.223	0.538	7.734	12.316	1.786	8.704
Beta	2966	0.995	1.027	0.225	-2.276	1.781	-1.476	18.147
Log Labour	2966	3.234	3.233	0.518	1.176	5.622	0.153	4.429
Percentage change of Listing	2966	0.038	0.010	0.046	-0.004	0.182	1.022	2.949
Percentage change of Capitalization	2966	0.672	0.025	1.163	-0.640	2.768	0.739	2.029
Percentage change of Trading Volume	2966	0.900	0.271	1.542	-0.409	4.283	1.267	3.322
Percentage change of Accounts	2966	0.162	0.064	0.233	0.018	0.739	1.951	5.096
Percentage change of A-Shares	2966	0.032	0.010	0.041	-0.004	0.170	1.341	3.860
Percentage change of P/E Ratio	2966	0.160	-0.087	0.646	-0.749	1.039	0.148	1.450
Industry	2966	0.710	1	0.454	0	1	-0.926	1.857
Commercial	2966	0.032	0	0.175	0	1	5.347	29.586
Property	2966	0.023	0	0.149	0	1	6.426	42.292
Public Service	2966	0.105	0	0.307	0	1	2.574	7.624
Composite	2966	0.131	0	0.337	0	1	2.194	5.814
Year 1999	2966	0.087	0	0.282	0	1	2.924	9.547
Year 2000	2966	0.168	0	0.374	0	1	1.774	4.146
Year 2001	2966	0.297	0	0.457	0	1	0.887	1.786
Year 2002	2966	0.142	0	0.355	0	1	2.056	5.227
Year 2003	2966	0.148	0	0.355	0	1	1.986	4.945
Year 2004	2966	0.155	0	0.362	0	1	1.902	4.618

There are key descriptions for all control variables after fixing those missing and outliers as

shown in Table 7.2. The log size includes 2966 observations. The mean is 9.3278, the median

is 9.2231 and the standard deviation is 0.5383. The value range is from 7.7338 to 12.3155.

The skewness is 1.7862 and the kurtosis is 8.7040. Table 7.2 also presents the mean, median,

standard deviation, minimum, maximum, skewness, and kurtosis values for the entire long-

term control variables. The mean of beta is 0.9953; the average beta of sample is very close

to the market beta. The mean of labour is 4426 employees, a lot larger than the average

employee number of New Zealand IPOs. The value range is from 15 persons to 418,871

persons. Compared with the statistics before data transformation, only log of labour was

updated by filling the missing values and then offered a normal distribution. The updated data

provided a normally distributed dataset similar to the original sample dataset.

7.2.2 Short-Term Data Descriptive Statistics

7.2.2.1 Descriptive Statistics of Short-Term Sample

Table 7.3 Summary of Dependent and Independent Variables Descriptive Statistics

Variable	Obs.	Mean	Median	Std.Dev.	Min	Max	Skewness	Kurtosis
Log First Day Return	409	0.489	0.477	0.105	0.286	0.810	0.681	3.334
Tobin's Q	409	2.514	2.237	1.171	0.955	7.826	1.279	5.298
ROA	409	0.049	0.046	0.027	-0.064	0.159	0.456	5.487
Log MD Age	409	1.646	1.644	0.068	1.431	1.833	0.036	2.328
MD Gender	409	0.039	0.000	0.194	0.000	1.000	4.754	23.603
MD Qualification	409	1.066	1.000	0.788	0.000	4.000	0.967	5.087
MD Experience	409	1.208	1.000	1.128	0.000	7.000	0.857	4.308
Log Pay	409	5.483	5.505	0.375	4.301	6.568	-0.215	3.000
MD Duality	409	0.863	1.000	0.344	0.000	1.000	-2.112	5.462
Chairman Experience	409	1.342	1.000	1.127	0.000	7.000	0.781	4.286
Chairman Qualification	409	1.120	1.000	0.839	0.000	4.000	1.119	5.334
Log Number of Directors	409	0.974	0.954	0.105	0.602	1.279	-0.196	3.938
Independent Director Percentage	409	0.197	0.222	0.163	0.000	0.556	-0.104	1.468
Female Director Number	409	0.976	1.000	1.034	0.000	5.000	1.022	3.798
Number of Supervisors	409	4.394	5.000	1.621	1.000	11.000	1.065	4.019
Log Board Meeting per Year	409	0.771	0.778	0.168	0.301	1.279	-0.106	3.131
Supervisors Meeting per Year	409	3.176	3.000	1.315	1.000	9.000	0.969	4.501
Insider Shareholding	409	0.030	0.000	0.129	0.000	0.997	5.033	29.136
SOE Percentage	409	0.384	0.485	0.279	0.000	0.850	-0.296	1.496
Legal Person Percentage	409	0.250	0.116	0.268	0.000	0.800	0.624	1.801
Non-trading Percentage	409	0.672	0.671	0.074	0.438	0.908	0.175	3.561
Number of Committees	409	0.883	0.000	1.578	0.000	5.000	1.325	2.894
Largest Shareholding	409	0.464	0.471	0.170	0.061	0.986	-0.110	2.190

There are key descriptions for all dependent, independent variables after fixing for missing

data and outliers as shown in Table 7.3. Abnormal first day return includes 409 observations

and there is no missing value. The mean is 1.3451, which is 134.51% above the current day

market return on average, indicating that IPOs' short-term performances are irrational in

China. The abnormal return range is from -0.0664 to 34.8549, suggesting that some IPOs

have extreme performances during the listing date. Log abnormal first day return also

includes 409 values. The mean is 0.4889, the median is 0.4773, and the standard deviation is 0.1046. The range is from 0.2864 to 0.8098. The skewness is 0.6810 and the kurtosis is 3.3339. Table 7.3 also presents the mean, median, standard deviation, minimum, maximum, skewness, and kurtosis values for the entire short-term dependent and independent variables.

Tobin's Q includes 409 observations and there are eight missing values. The mean is 2.5138, which is significantly above 1, indicating those stock prices are irrationally high and overvalued. The mean of ROA is 0.0491. The value indicates that most Chinese firms are surviving in a difficult situation caused by the recent global economic recession.

Compared with the statistics before data transformation, Tobin's Q, log of CEO age, CEO gender, CEO qualification, CEO experience, log of pay, CEO duality, chairman qualification, log board meeting per year, supervisors meetings per year, and number of committees have been updated by filling the missing values. Outliers of the abnormal first day return, log of abnormal first day return, Tobin's Q, ROA, and log of ROA have been removed and replaced. After all, abnormal first day return, log of abnormal first day return, Tobin's Q, ROA, log of ROA, log of CEO age, and log of pay provided more normal variants. CEO qualification, chairman qualification, log meeting per year, supervisors meeting per year provides slightly worse normal variants. Others offer similar normal variants. Overall, the results indicate that all data are normally distributed except CEO gender and insider shareholding. The updated data provide a better and more normal distributed dataset than the original sample dataset.

7.2.2.2 Short-Term Control Variables Descriptive Statistics

Table 7.4 Summary of Control Variables Descriptive Statistics

Variable	Obs.	Mean	Median	Std.Dev.	Min	Max	Skewness	Kurtosis
Log Size	409	9.096	9.007	0.446	8.332	11.570	2.511	12.213
Beta	409	1.163	1.077	0.509	-1.105	2.653	0.601	5.575
Log Labour	409	3.149	3.137	0.467	1.681	5.622	0.517	5.012
Percentage change of Listing	409	0.113	0.107	0.034	0.073	0.182	0.774	2.759
Percentage change of Capitalization	409	0.114	0.025	0.309	-0.127	0.847	1.687	4.470
Percentage change of Trading Volume	409	0.121	0.228	0.377	-0.276	0.849	0.560	2.387
Percentage change of Accounts	409	0.103	0.039	0.094	0.025	0.297	1.024	2.701
Percentage change of A-Shares	409	0.097	0.092	0.043	0.022	0.170	-0.076	2.512
Percentage change of P/E Ratio	409	-0.112	-0.337	0.314	-0.352	0.570	1.214	3.240
Industry	409	0.721	1	0.449	0	1	-0.983	1.967
Commercial	409	0.029	0	0.169	0	1	5.578	32.114
Property	409	0.022	0	0.147	0	1	6.517	43.467
Public Service	409	0.107	0	0.310	0	1	2.533	7.416
Composite	409	0.122	0	0.328	0	1	2.306	6.319
Year 1999	409	0.066	0	0.249	0	1	3.496	13.219
Year 2000	409	0.137	0	0.344	0	1	2.112	5.462
Year 2001	409	0.262	0	0.440	0	1	1.085	2.177
Year 2002	409	0.144	0	0.352	0	1	2.025	5.101
Year 2003	409	0.171	0	0.377	0	1	1.746	4.049
Year 2004	409	0.220	0	0.415	0	1	1.352	2.827

There are key descriptions for all control variables after fixing those missing and outliers as shown in Table 7.4. The log size includes 409 observations. The mean is 9.0964, the median is 9.0068 and the standard deviation is 0.4464. The value range is from 8.3320 to 11.5701. The skewness is 2.5106 and the kurtosis is 12.2131. Table 7.4 also presents the mean, median, standard deviation, minimum, maximum, skewness, and kurtosis values for the entire short-term control variables. The mean of beta is 1.1633; the average beta of sample is very close to the market beta. Compared with the statistics before data transformation, log of labour, percentage change of listing, percentage change of capitalization, percentage of trading volume, percentage change of accounts, percentage change of A-shares, and percentage change of P/E ratios have been updated by filling the missing values. Outliers of beta had been removed and then given replacements. After all, beta and percentage change of capitalization provide more normal distribution. The remainder provide similar levels of

variants. The updated data provides a better and more normal distributed dataset than the original sample dataset.

7.3 Pair-Wise Correlation Test Results

7.3.1 Pair-Wise Correlation Test Results for Long-Term Sample

The correlation matrix for long-term variables, shown as Table 12.1 in the appendices, gives all the correlations between dependent and explanatory variables. Most independent and control variables are significantly correlated with the level of abnormal yearly return, Tobin's Q and ROA. These results indicate that corporate governance factors have an impact on stock performance and financial performance on Shanghai Stock Exchange IPOs. A few market value based control variables are highly correlated with each other. So the study pays attention to those variables by carrying out further multicollinearity tests.

7.3.2 Pair-Wise Correlation Test Results for Short-Term Sample

The correlation matrix for short-term variables, shown as Table 12.2 in the appendices gives all the correlations between dependent and explanatory variables. Most of the control variables are significantly correlated with the level of abnormal first day return, Tobin's Q, and ROA. Some independent variables are significantly correlated with the level of abnormal first day return, Tobin's Q, and ROA. These results indicate that corporate governance factors have relatively less impact on short-term IPO performance than on long-term IPO performance. A few of the market value based control variables are highly correlated with each other. The study pays attention to those variables by carrying out further multicollinearity tests.

7.4 Multicollinearity/Heteroskedasticity/Panel and Cross Sectional Data OLS Regression Results

7.4.1 Multicollinearity/Heteroskedasticity/Panel Data OLS Regression Results for Long Term IPO Performance

The study tests the relationship between corporate governance and control variables using abnormal yearly return by panel data OLS regression. The estimations include five attributions of governance estimations, viz size, demographics, leadership, education, and evaluation. This last estimation shows the estimated coefficients when all governance and control variables are included in the regression. A control variable in the form of a dummy for composite is dropped by Stata automatically due to a multicollinearity problem. Each regression provides similar results for independent and control variables, indicating that those results are not affected by addition or deletion of the variables which exhibit multicollinearity. The abnormal yearly return is significantly positively related to top three officers' pay, and is significantly negatively related to the percentage of independent directors. However, the results shown for all regressions are problematic as diagnostic testing indicates the presence of heteroskedasticity; GLS regressions or Dynamic GMM regressions are likely to be more robust.

Similarly, the study tests the relationship between corporate governance and control variables using Tobin's Q by panel data OLS regression. The estimations include five attributions of governance estimations similar to the abnormal yearly return analysis. The same multicollinearity issues arise as reported for governance above. Tobin's Q is significantly positively related to CEO age, CEO gender, CEO qualification, top three officers' pay, supervisors' meeting per year, and largest shareholding. Tobin's Q is significantly negatively related to the percentage of independent directors. The regressions exhibit heteroskedasticity,

so GLS regressions or Dynamic GMM regressions are likely to yield superior results in following analysis.

The study also tests the relationship between corporate governance and control variables using ROA by panel data OLS regression. The same five attributions of governance estimations are used. Multicollinearity and heteroskedasticity were present. ROA is significantly positively related to CEO gender, top three officers' pay, chairman experience, supervisors' meeting per year, the percentage of non-trading shareholdings and largest shareholding. GLS regressions or Dynamic GMM regressions will be investigated in the following analysis.

7.4.2 Multicollinearity/Heteroskedasticity/Panel Data OLS Regression Results for Short -Term IPO Performance

The study tests the relationship between corporate governance and control variables using abnormal first day return by panel data OLS regression. The estimations include five attributions of governance estimations, viz size, demographics, leadership, education, and evaluation. This last attribution shows the estimated coefficients when all governance and control variables are included in the regression. The control variables in the form of percentage change of listing, percentage change of capitalization, percentage change of accounts, percentage change of A-shares, and dummy for commercial are dropped by Stata automatically due to a multicollinearity problem. Each regression provides similar results for independent and control variables, indicating that those results are not affected by addition or deletion of the variables exhibiting multicollinearity. The abnormal first return is significantly positively related to state share ownership, and is significantly negatively related to the

percentage of largest shareholding. However, the results for all regressions show no heteroskedasticity; OLS regressions are likely to be robust.

Similarly, the study tests the relationship between corporate governance and control variables using Tobin's Q by panel data OLS regression. The estimations include five attributions of governance estimations similar to the abnormal first day return analysis. The same multicollinearity issues arise as reported for governance above. Tobin's Q is significantly positively related to top three officers' pay, number of directors, legal person share ownership, non-trading share ownership, and largest shareholding. Tobin's Q is significantly negatively related to CEO duality. The regressions exhibit heteroskedasticity, so GLS regressions or 2SLS regressions are likely to yield superior results in following analysis.

The study also tests the relationship of corporate governance and control variables with ROA using panel data OLS regression. The same five attributions of governance estimations are used. Multicollinearity was present. ROA is significantly positively related to top three officers' pay, un-trading share ownership, and largest shareholding. ROA is also significantly negatively related to CEO age, percentage of independent directors, and number of supervisors. GLS regressions or 2SLS regressions are investigated in the following analysis.

7.5 Endogeneity Tests

The test for endogeneity between corporate governance variables and IPO performance variables is necessary in the study. If there are endogeneity problems between governance and IPO performance variables, the study has to ignore OLS or GLS regressions. If endogeneity exists and the instrument variables are available, the study uses 2SLS or 3SLS

estimations. If endogeneity exists and the instrument variables are not available, the study employs dynamic panel GMM estimation.

The study uses the Durbin-Wu-Hausman (DWH) (Wu, 1973; Hausman, 1978) test to analyse the endogeneity relationship between dependent and independent variables. According to the DWH test, if the P-value is less than 10%, then there is evidence of variable endogeneity.

7.5.1 Endogeneity Test Results for Abnormal Yearly Return

Table 7.5 includes five attributions of governance estimations, which are size, demographics, leadership, education, and evaluation estimations. The last column shows the estimation coefficients when all governance and control variables are included in the regression. The presence of heteroskedasticity necessitated the use of GLS estimation for the regressions of "demographics" and "education". Diagnostic testing indicated the presence of heteroskedasticity and endogeneity in "size", "leadership", "evaluation" and "all estimation" and a dynamic GMM estimation is used. However, the study almost selected all possible corporate governance variables, so finding instrument variables other than from this dataset is problematic. Hence the study uses dynamic panel GMM estimation.

Table 7.5 The DWH Test for Endogeneity of Abnormal Yearly Return

Independent and Control Variable	Governance Compositions					
	Size Coefficient	*Demographic Coefficient*	*Leadership Coefficient*	*Education Coefficient*	*Evaluation Coefficient*	*All Coefficient*
MD Age		0.612				0.555
MD Qualification				2.626		2.700
MD Experience					1.231	1.112
Top Three Officer Pay					10.204***	9.489***
Chairman Experience					0.137	0.364
Chairman Qualification				0.088		0.039
Number of Directors	0.150					0.070
Independent Director Percentage	0.716					0.919
Female Director Number		0.127				0.150
Number of Supervisors	6.511**					6.024**
Board Meeting per Year					6.314**	4.015**
Supervisors Meeting per Year					4.973**	3.327*
Insider Shareholding			3.030*			2.839*
SOE Shareholding			3.304*			3.311*
Legal Person Shareholding			2.107			1.840
Non-trading Shareholding			1.187			1.270
Number of Committees	8.116***					5.063**
Largest Shareholding			6.395**			6.243**

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

7.5.2 Endogeneity Test Results for Tobin's Q

Table 7.6 presents the endogeneity test results between governance variables and dependent variable Tobin's Q. The table includes five attributions of governance estimations, which are size, demographics, leadership, education and evaluation estimations. The last column shows the endogeneity test results when all governance and control variables are included in the regression. The presence of heteroskedasticity necessitates the use of GLS estimation for the regressions of "demographics" and "education". Diagnostic testing indicates the presence of heteroskedasticity and endogeneity in "size", "leadership", "evaluation" and "all estimation" and a dynamic GMM estimation is used.

Table 7.6 The DWH Test for Endogeneity of Tobin's Q

Independent and Control Variable	Governance Compositions					
	Size Coefficient	*Demographic Coefficient*	*Leadership Coefficient*	*Education Coefficient*	*Evaluation Coefficient*	*All Coefficient*
MD Age		0.012				0.001
MD Qualification				0.247		0.040
MD Experience					2.997*	2.863*
Top Three Officer Pay					0.905	1.214
Chairman Experience					0.331	0.025
Chairman Qualification				0.054		0.027
Number of Directors	3.259*					3.461*
Independent Director Percentage	0.318					0.499
Female Director Number		0.439				0.630
Number of Supervisors	0.777					0.702
Board Meeting per Year					1.556	0.698
Supervisors Meeting per Year					4.000**	2.853*
Insider Shareholding			1.544			1.089
SOE Shareholding			3.287*			1.606
Legal Person Shareholding			8.373***			4.039**
Non-trading Shareholding			2.788*			2.516
Number of Committees	3.694*					2.920*
Largest Shareholding			1.935			1.142

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

7.5.3 Endogeneity Test Results for ROA

Table 7.7 presents the endogeneity test results between governance variables and dependent variable ROA. There are no endogeneity problems between ROA and board size/demographic/education variables, so the study employs GLS estimation on those three regressions. The presence of heteroskedasticity necessitated the use of GLS estimation for the regressions of "size", "demographics" and "education". Diagnostic testing indicated the presence of heteroskedasticity and endogeneity in "leadership", "evaluation" and "all estimation" and a dynamic GMM estimation is used.

Table 7.7 The DWH Test for Endogeneity of ROA

Independent and Control Variable	Size Coefficient	Demographic Coefficient	Leadership Coefficient	Education Coefficient	Evaluation Coefficient	All Coefficient
MD Age		0.837				0.640
MD Qualification				0.796		0.011
MD Experience					1.681	1.532
Top Three Officer Pay					3.734*	2.403
Chairman Experience					0.665	0.224
Chairman Qualification				0.314		0.320
Number of Directors	2.527					2.260
Independent Director Percentage	0.547					0.438
Female Director Number		1.073				1.723
Number of Supervisors	2.641					2.349
Board Meeting per Year					6.198**	3.663**
Supervisors Meeting per Year					0.007	0.333
Insider Shareholding			0.677			2.535
SOE Shareholding			8.447***			1.354
Legal Person Shareholding			7.332***			0.653
Non-trading Shareholding			0.022			0.001
Number of Committees	0.909					0.379
Largest Shareholding			0.000			0.007

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

Tables 7.8 and 7.9 present the conclusion of heteroskedasticity tests, endogeneity tests, and potential regression estimations of long- and short-term SZSE IPO performance models.

Table 7.8 The Heteroskedasticity, Endogeneity Results and Final Estimations of Long-Term Performance

Abnormal Yearly Return	Governance Compositions					
Specification Test	*Size*	*Demographic*	*Leadership*	*Education*	*Evaluation*	*All*
Heteroskedasticity	Yes	Yes	Yes	Yes	Yes	Yes
Endogeneity	Yes	No	Yes	No	Yes	Yes
Estimation	2SLS	GLS	2SLS	GLS	2SLS	Dynamic GMM

Tobin's Q	Governance Compositions					
Specification Test	*Size*	*Demographic*	*Leadership*	*Education*	*Evaluation*	*All*
Heteroskedasticity	Yes	Yes	Yes	Yes	Yes	Yes
Endogeneity	Yes	No	Yes	No	Yes	Yes
Estimation	2SLS	GLS	2SLS	GLS	2SLS	Dynamic GMM

ROA	Governance Compositions					
Specification Test	*Size*	*Demographic*	*Leadership*	*Education*	*Evaluation*	*All*
Heteroskedasticity	Yes	Yes	Yes	Yes	Yes	Yes
Endogeneity	No	No	Yes	No	Yes	Yes
Estimation	GLS	GLS	2SLS	GLS	2SLS	Dynamic GMM

Table 7.9 The Heteroskedasticity, Endogeneity Results and Final Estimations of Short-Term Performance

Abnormal First Day Return	Governance Compositions					
Specification Test	*Size*	*Demographic*	*Leadership*	*Education*	*Evaluation*	*All*
Heteroskedasticity	No	No	No	No	No	No
Endogeneity	Yes	No	Yes	No	Yes	Yes
Estimation	2SLS	OLS	2SLS	OLS	2SLS	GLS

Tobin's Q	Governance Compositions					
Specification Test	*Size*	*Demographic*	*Leadership*	*Education*	*Evaluation*	*All*
Heteroskedasticity	Yes	Yes	Yes	Yes	Yes	Yes
Endogeneity	Yes	No	Yes	No	Yes	Yes
Estimation	2SLS	GLS	2SLS	GLS	2SLS	2SLS

ROA	Governance Compositions					
Specification Test	*Size*	*Demographic*	*Leadership*	*Education*	*Evaluation*	*All*
Heteroskedasticity	No	No	No	No	No	No
Endogeneity	No	No	Yes	No	Yes	Yes
Estimation	OLS	OLS	2SLS	OLS	2SLS	GLS

7.6 Long-Term Final Estimations

7.6.1 Long-Term Final Estimations for Abnormal Yearly Return

Table 7.10 Panel Data GLS Regression/Dynamic GMM Regression Results for Dependent Variable Abnormal Yearly Return

	Governance Compositions					
	Size	*Demographic*	*Leadership*	*Education*	*Evaluation*	*All*
	GMM	*GLS*	*GMM*	*GLS*	*GMM*	*GMM*
Independent and Control Variable	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*
Constant	1.004***	0.280***	0.584**	0.298	0.946***	0.983***
L1[14]	-0.102***		-0.087***		-0.066**	-0.079***
MD Age		0.010				-0.022
MD Gender		0.000				0.009
MD Qualification				0.003		-0.003
MD Experience					0.002	0.002
Top Three Officer Pay					-0.139**	-0.555
CEO Duality			-0.001			-0.005
Chairman Experience					0.005*	0.005*
Chairman Qualification				0.000		0.011
Number of Directors	0.015					0.019
Independent Director Percentage	-0.222***					-0.227***
Female Director Number		-0.002				-0.004
Number of Supervisors	0.003					0.008
Board Meeting per Year					-0.230**	-0.127*
Supervisors Meeting per Year					0.004	0.006
Insider Shareholding			-0.002			-0.034
SOE Shareholding			0.041			0.000
Legal Person Shareholding			0.001			-0.036
Non-trading Shareholding			0.036			0.062
Number of Committees	-0.013***					-0.006
Largest Shareholding			0.098			0.019
Size	-0.035	0.010**	-0.012	0.009**	0.070*	0.008
Beta	-0.107***	-0.114***	-0.107***	-0.113***	-0.115***	-0.112***
Labour	-0.034	0.003	-0.028	0.004	-0.043	-0.035
Percentage change of Listing	-0.770***	-0.279***	-0.501***	-0.275***	-0.445**	-0.856***
Percentage change of Capitalization	-0.290***	-0.191***	-0.237***	-0.191***	-0.269***	-0.323***
Percentage change of Trading Volume	0.099***	0.027***	0.039***	0.027***	0.069***	0.110***
Percentage change of Accounts	0.455***	0.568***	0.610***	0.569***	0.590***	0.504***
Percentage change of A-Shares	-0.197**	0.001	-0.101	-0.001	-0.371**	-0.254*
Percentage change of P/E Ratio	0.221***	0.178***	0.226***	0.178***	0.225***	0.251***
Industry		-0.001		-0.001		
Commercial		0.000		0.001		

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[14] L1 is the lag variable which used in dynamic panel GMM. According to my dataset I used L1 as a previous year data. For example, L1 for 2009 abnormal yearly return is 2010 abnormal yearly return.

Property		0.016*		0.017*	
Public Service		-0.025***		-0.025***	
Year 1999		0.017**		0.016**	
Year 2000		0.013**		0.011*	
Year 2001		0.018***		0.016***	
Year 2002		0.024***		0.022***	
Year 2003		0.036***		0.034***	
Year 2004		0.028***		0.026***	
R^2		0.362		0.362	
AR(1)	-12.013***		-12.040***	-12.356***	-12.600***
AR(2)	-0.687		-0.649	0.194	-0.136
J-statistics	145.793		147.516	164.258	246.369
Chi2	608.310***	1211.750***	592.970***	1194.170***	576.130***	682.350***

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

The results presented in Table 7.10 show the relationship of corporate governance and control variables with abnormal yearly return. The table includes five governance estimations, which are size, demographics, leadership, education, and evaluation estimations. The last column shows the estimation coefficients when all governance and control variables are included in the regression. The presence of heteroskedasticity necessitates the use of GLS estimation for the regressions of "demographics" and "education". Diagnostic testing indicates the presence of heteroskedasticity and endogeneity in "size", "leadership", "evaluation" and "all estimation" and a dynamic GMM estimation is used. Three governance variables and seven control variables are observed as significantly impacting the abnormal yearly return.

CEO and the abnormal yearly return

CEO gender and experience are positively related to the long-term abnormal yearly return, but not at a significant level. CEO age, CEO qualification, top management salary and CEO duality are negatively related to the abnormal yearly return, and again are not at a statistically significant level.

Board and the abnormal yearly return

Chairman experience is positively related to the abnormal yearly return at the 10% significant level. This may be attributable to investors' behaviour reflecting an understanding that more experienced chairmen have more knowledge in the current industry and will make a consistent contribution to the company. This finding is consistent with the study of Dempere (2007). He found that directors' knowledge and experience has a positive relationship with long-term IPO performance in the US. This finding is also in line with Mclntyre et al. (2007). They suggested that high-level board experience is positively associated with firm performance in Canada. The proportion of independent directors is negatively related to the abnormal yearly return, at the 1% significant level. This finding is opposite to some prior studies. Abdullah (2004), Balatbat et al. (2004), Bonn (2004), Bonn et al. (2004), Roosenboom et al. (2005) and Reddy et al. (2008) suggest outside directors are positively related to firm value in Holland, Australia and New Zealand, but have no influence in Japan and Malaysia. This may be attributable to investors' behaviour reflecting a concern that independent directors lack a professional background and will not make a consistent contribution to the company.

The number of board meetings per year is negatively related to the abnormal yearly return, at the 10% significant level. The high frequency of board meetings may be because board efficiency is low. It may also indicate that the company has a lot of issues. Chairman qualification, number of directors, number of supervisors, and supervisors meeting per year are positively related to the abnormal yearly return, but not at a significant level. The number of female directors is negatively related to the abnormal yearly return, and also not at a significant level.

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The number of directors and number of female directors are not significantly related to the long-term abnormal yearly return in this study.

Ownership and the abnormal yearly return

State ownership, non-trading ownership and the largest shareholding are positively related to the abnormal yearly return, but not at a significant level. Insider ownership and legal person ownership are negatively related to the abnormal yearly return and are not significant.

Control variables and the abnormal yearly return

Beta, change of listing and change of capitalization are negatively related to the abnormal yearly return, at the 1% significant level. Change of trading volume, change of investor accounts, and change of P/E ratio are positively related to the abnormal yearly return at the 1% significant level. Change of A-Shares listing is negatively related to the abnormal yearly return at the 10% significant level. The results indicate that investors prefer low risk IPOs on the Shanghai Stock Exchange.

7.6.2 Long-Term Final Estimations for Tobin's Q

Table 7.11 Panel Data GLS Regression/ Dynamic GMM Regression Results for Dependent Variable Tobin's Q

	Governance Compositions					
	Size	*Demographic*	*Leadership*	*Education*	*Evaluation*	*All*
	GMM	*GLS*	*GMM*	*GLS*	*GMM*	*GMM*
Independent and Control Variable	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*
Constant	15.316***	7.430***	11.383***	8.964***	10.432***	13.378***
L1	0.157***		0.118***		0.095**	0.076*
MD Age		0.961***				1.881***
MD Gender		0.241				0.110
MD Qualification				0.056**		0.017
MD Experience					0.041	-0.055
Top Three Officer Pay					0.122	0.108
CEO Duality			0.010			0.035

Chairman Experience					0.007	0.022
Chairman Qualification				0.008		0.028
Number of Directors	-4.345*					-4.370***
Independent Director Percentage	-1.999***					-2.047***
Female Director Number		-0.015				0.023
Number of Supervisors	0.039					0.088**
Board Meeting per Year					-0.310	-0.493**
Supervisors Meeting per Year					0.107***	0.137***
Insider Shareholding			-1.232			-0.622
SOE Shareholding			-1.139			0.964
Legal Person Shareholding			-1.217*			0.780
Non-trading Shareholding			-0.079			-0.772
Number of Committees	0.002					0.005
Largest Shareholding			1.012**			0.009
Size	-0.927***	-0.605***	-0.968***	-0.608***	-1.001***	-1.139***
Beta	-0.397***	-1.023***	-0.457***	-1.018***	-0.466***	-0.448***
Labour	-0.043	-0.072	-0.140	-0.073	-0.084	-0.035
Percentage change of Listing	0.469	2.931***	4.091***	2.896***	2.585**	0.126
Percentage change of Capitalization	-0.703***	0.169**	0.167	0.174**	-0.027	-0.580***
Percentage change of Trading Volume	-0.017	-0.861***	-0.554***	-0.869***	-0.579***	-0.075
Percentage change of Accounts	3.033***	4.999***	3.599***	5.025***	4.051***	3.004***
Percentage change of A-Shares	-0.316	1.124**	-0.427	1.107**	1.203	1.295
Percentage change of P/E Ratio	1.361***	1.108***	0.799***	1.114***	1.081***	1.199***
Industry		-0.088		-0.066		
Commercial		-0.399***		-0.321**		
Property		-0.527***		-0.511***		
Public Service		-0.271***		-0.243**		
Year 1999		-0.577		-0.587		
Year 2000		-0.669		-0.672		
Year 2001		-0.556		-0.575		
Year 2002		-0.489		-0.498		
Year 2003		-0.470		-0.490		
Year 2004		-0.462		-0.496		
R^2		0.447		0.453		
AR(1)	-10.011***		-9.174***		-9.385***	-9.454***
AR(2)	0.435		0.008		-0.482	-0.792
J-statistics	333.860		398.514		345.683	339.895
Chi2	1177.730***	1429.570***	1207.060***	1399.020***	1235.710***	1273.850***

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

The results presented in Table 7.11 show the relationship of corporate governance and control variables with long-term Tobin's Q. The table includes five governance estimations, which are size, demographics, leadership, education, and evaluation estimations. The last column

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shows the estimation coefficients when all governance and control variables are included in the regression. The presence of heteroskedasticity necessitates the use of GLS estimation for the regressions of "demographics" and "education". Diagnostic testing indicates the presence of heteroskedasticity and endogeneity in "size", "leadership", "evaluation" and "all estimation" and a dynamic GMM estimation is used. Six governance variables and five control variables are observed as significantly impacting the long-term Tobin's Q.

CEO and the long-term Tobin's Q

CEO age is positively related to long-term Tobin's Q, at the 1% significant level. According to McKnight, Tomkins, Weir and Hobson (2000), CEO age is U-shape, associated with their pay and firm performance in the UK. The current study finding goes further, noting that CEO age is positively related with the long-term Tobin's Q in China. A plausible reason is that CEO age is important for China given a continuing general reverence given to older people who are viewed as having acquired more wisdom. The older CEOs are more likely to have more experience in the industry. CEO gender, qualification, duality and top management salary are positively related to the long-term Tobin's Q, but while intuitively appealing the correlation is not at a significant level. CEO experience is negatively related to the long-term Tobin's Q, and again, not at a statistically significant level.

Board and the long-term Tobin's Q

The number of directors is negatively related to long-term Tobin's Q at a 1% significant level. According to Abdullah (2004), Bonn (2004), Bonn et al. (2004), Daily et al. (2005), Dwivedi et al. (2005), Staikouras et al. (2007), and Chang (2009), board size is negatively associated with firm performance in Japan, Taiwan and Europe, but positively associated to firm performance in India, and has no influence in Australia, the US and Malaysia. The current

study finding goes further, noting that the number of directors is negatively related to long-term Tobin's Q in China. A plausible reason is that a large board decreases effective communication and co-ordination between shareholders. Another possible reason is that investors may be concerned that the directors lack a professional background. Board meeting per year is negatively related to the long-term Tobin's Q at the 5% significant level. The high frequency of board meetings may be because board efficiency is low. It may be also indicate that a company has a lot of issues.

The proportion of independent directors is negatively related to the long-term Tobin's Q at the 1% significant level. This finding is the opposite of some prior studies. Abdullah (2004), Balatbat et al. (2004), Bonn (2004), Bonn et al. (2004), Roosenboom et al. (2005) and Reddy et al. (2008) suggest outside directors are positively related to firm value in Holland, Australia and New Zealand, but have no influence in Japan and Malaysia. This may be attributable to investors' behaviour reflecting a concern that the independent directors lack a professional background and will not make a consistent contribution to the company. Actually, many Chinese independent directors are government officials, academics, and also foreigners and perhaps they do not have a reasonable understanding of a company's current situation. Before 2002, each listed company only needed to include two independent directors on its board. Due to their small number, independent directors are marginalized and find it hard to influence board decision-making.

The number of supervisors is positively related to long-term ROA at the 5% significant level. Supervisors' meeting per year is positively related to long-term Tobin's Q at the 1% significant level. As mentioned in section 5.5.2, supervisors play a key role. The investors may believe that more supervisors and a more active supervisory group will help the

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company achieve better performance, protect shareholders' benefits, and reduce agency costs. The chairman's qualification, the chairman's education, the number of female directors, and the number of committees are positively related to the long-term Tobin's Q, but not at significant levels. The number of female directors is not significantly related to the long-term Tobin's Q in this study.

Ownership and long-term Tobin's Q

SOE ownership, legal person ownership, the number of committees, and the largest shareholding are positively related to the long-term Tobin's Q, but not at significant levels. Insider ownership and non-trading ownership are negatively related to the long-term Tobin's Q, though not significantly.

Control variables and long-term Tobin's Q

Size, beta, and change of capitalization are negatively related to the long-term Tobin's Q at the 1% significant level. These results indicate that Chinese investors were likely to invest in small and low risk industry IPOs. The change of investor accounts and the change of P/E ratio are positively related to the long-term Tobin's Q at the 1% significant level. The results indicate that one of the investors' trading strategies is to hold stocks and enjoy the capital gain when stock prices rise.

7.6.3 Long-Term Final Estimations for ROA

Table 7.12 Panel Data GLS regression/Dynamic GMM Regression Results for Dependent Variable ROA

	Governance Compositions					
	Size	*Demographic*	*Leadership*	*Education*	*Evaluation*	*All*
	GLS	GLS	GMM	GLS	GMM	GMM
Independent and Control Variable	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*
Constant	-0.097**	-0.111**	-0.258*	-0.083*	-0.175	-0.350**
L1			0.224***		0.233***	0.211***
MD Age		0.015				-0.010
MD Gender		0.020**				0.018
MD Qualification				0.001		0.000
MD Experience					0.001	0.001
Top Three Officer Pay					0.008*	0.035***
CEO Duality			-0.007			-0.006
Chairman Experience					0.001	0.001
Chairman Qualification				0.003**		0.005**
Number of Directors	0.029*					-0.010
Independent Director Percentage	-0.025					-0.028
Female Director Number		0.000				0.001
Number of Supervisors	0.001*					0.002*
Board Meeting per Year					0.051	0.035
Supervisors Meeting per Year					-0.001	-0.001
Insider Shareholding			0.027			0.031
SOE Shareholding			-0.054			-0.011
Legal Person Shareholding			-0.083			-0.008
Non-trading Shareholding			0.066			0.027
Number of Committees	0.001*					-0.001
Largest Shareholding			0.042*			0.044**
Size	0.020***	0.021***	0.037**	0.021***	0.030	0.020
Beta	-0.041***	-0.041***	-0.034***	-0.041***	-0.033***	-0.031***
Labour	0.000	0.000	-0.017	0.000	-0.017	-0.013
Percentage change of Listing	0.157***	0.156***	0.148***	0.150***	0.159**	0.182**
Percentage change of Capitalization	0.010*	0.012***	0.011	0.012***	0.015*	0.024**
Percentage change of Trading Volume	-0.008	-0.010***	-0.005	-0.010***	-0.007	-0.016*
Percentage change of Accounts	0.026**	0.032***	0.010	0.031***	-0.002	0.022
Percentage change of A-Shares	0.049**	0.052**	0.037	0.054**	0.096*	0.092
Percentage change of P/E Ratio	0.000	0.000	-0.003	0.000	-0.007	-0.006
Industry	0.019***	0.017***		0.018***		
Commercial	0.008	0.005		0.007		
Property	0.005	0.004		0.005		
Public Service	0.015*	0.016**		0.016**		
Year 1999	-0.066***	-0.066***		-0.066***		
Year 2000	-0.069***	-0.070***		-0.070***		
Year 2001	-0.063***	-0.064***		-0.064***		
Year 2002	-0.053***	-0.054***		-0.053***		

Year 2003	-0.055***	-0.056***		-0.056***		
Year 2004	-0.051***	-0.051***		-0.051***		
R^2	0.125	0.119		0.122		
AR(1)		-7.477***	-7.477***		-7.430***	-7.181***
AR(2)		0.493	0.493		0.386	0.238
J-statistics		106.900	106.900		104.716	90.438
Chi2	245.300***	236.040***	151.040***	230.250***	132.490***	185.230***

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

Table 7.12 presents the relationship of corporate governance and control variables with the long-term ROA. The table includes five governance estimations, which are size, demographics, leadership, education, and evaluation estimations. The last column shows the estimation coefficients when all governance and control variables are included in the regression. The presence of heteroskedasticity necessitates the use of GLS estimation for the regressions of "size", "demographics" and "education". Diagnostic testing indicates the presence of heteroskedasticity and endogeneity in "leadership", "evaluation" and "all estimation" and a dynamic GMM estimation is used. Four governance variables and four control variables are observed as significantly impacting the abnormal yearly return.

CEO and the long-term ROA

Top management salary is positively related to the long-term ROA, at the 1% significant level. This finding is consistent with Engel et al. (2002), Lee et al. (2008) and Nikbakht et al. (2007), who find that top management salary is positively related to IPO performance. The result is also consistent with Kren et al. (1997) and Lippert (1999), who indicate a positive relationship between CEO compensation and firm performance. The current study's finding goes further by noting that top management salary is also positively related with long-term ROA in China. A plausible reason is that most of high income managers are from larger companies, those companies in China have relatively low risk and they offer better ROAs. CEO age, CEO qualification and CEO duality are negatively related to the long-term ROA,

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but not at a significant level. CEO gender and CEO experience are positively related to the long-term ROA, and also not at a significant level.

Board and the long-term ROA

Chairman's qualification is positively related to the long-term ROA, at the 5% significant level. This finding indicates these higher educated chairmen are more likely to help the company achieve better long-term performance. Number of supervisors is positively related to the long-term ROA, at the 10% significant level. As mentioned in section 5.5.2, supervisors play a key role. More supervisors are likely to help the company achieve a better performance reduce the agency cost. Chairman experience, the number of female directors and board meetings per year are positively related to the long-term ROA, but not at significant levels. The number of directors, the proportion of independent directors, supervisor meetings per year and the number of committees are negatively related to the long-term ROA, but not at a significant level.

Ownership and long-term ROA

The percentage of largest shareholding ownership is positively related to the abnormal yearly return, at the 5% significant level. This may be because a state shareholder or founder is likely to enhance monitoring of management and improve company performance. Insider ownership and the non-trading ownership are positively related to the long-term ROA, but not at a significant level. SOE ownership and legal person ownership are positively related to the long-term ROA, but not at a significant level.

Control variables and long-term ROA

Beta is negatively related to long-term ROA at the 1% significant level, and the change of trading volume is negatively related to long-term ROA at the 10% significant level. Change of IPO listing and change of capitalization are positively related to the long-term ROA at the 5% significant level.

Insignificant independent variables

There are some very important variables in prior studies but they are not significantly related to the long-term IPO performance in this SHSE study. CEO gender, experience and duality are not significantly related to the long-term IPO performance in this study. CEO gender is an important variable in prior financial performance studies. Adams et al. (2009) find a positive relationship between female CEO and firm performance. But CEO gender is not significantly related to the long-term abnormal yearly return in this study. First, this may be attributable to investors' behaviour reflecting that female CEOs are not considered an important signal. Second, according to the data description, only 2% of CEOs are female. It is very hard to find the relationship between female CEOs and long-term IPO performance from such a small sample.

CEO duality is also an important variable in prior IPO and firm performance studies. But this study finds it is not significant in the SHSE. Balatbat et al. (2004), Chahine et al. (2009), Dempere (2007), Lam et al. (2008) and Braun et al. (2007) indicate that CEO duality is significantly associated with IPO performance in Australia, some Arab countries and the US. Lam et al. (2008) and Abdullah (2004) indicate that CEO duality has no significant effect on firm performance in Hong Kong and Malaysia. This may be because of the specific role of Chinese chairmen. In western developed listing firms, most of the chairmen are independent

directors, but many Chinese chairmen are also the legal persons or the largest shareholders of the companies; they not only monitor firm performance, they also take a managing role in the company. Therefore, CEO duality is no longer important.

The number of female directors is an important variable in prior financial performance studies. Bonn (2004), Bonn et al. (2004), Campbell et al. (2008), and Reddy et al. (2008) find that female directors are positively associated with firm performance in Spain, US, New Zealand and Australia, but have no influence in Japan. It is the same with the CEO gender issue; there are very few female directors in the SHSE, so it is hard to find the relationship between female directors and long-term IPO performance from such small sample.

Insider ownership, SOE ownership, legal person ownership and non-trading ownership are not significantly related to the long-term IPO performance in this study. Insider ownership is an important variable in prior IPO and financial performance studies. For the developed market studies, Kroll et al. (2007), Nikbakht et al.(2007), Balatbat et al. (2004), and Roosenboom et al. (2005) suggest that managerial ownership is positively associated with IPO performance in the US, Australia and Holland. Dempere (2007), Firth (1997) and Reddy et al. (2008) indicate that insider ownership has a negative effect on firms' performance in New Zealand. For the developing market studies, Chen et al. (2005) indicate the increase of managerial ownership decreases the stock performance in Taiwan. Chou et al. (2007) and Hu et al. (2008) indicate that the link between firm performance and managerial ownership is non-linear in China and Taiwan. This may be attributable to investors' behaviour reflecting that they are not concerned about insider ownership. It may also be because private companies have a higher level of insider ownership and lower levels of ROA.

SOE ownership is an important variable in prior Chinese IPO and financial performance studies. Gu (2003) indicates that state ownership is significantly negatively connected to the short-term IPO performance in China. Chen (2001) indicates that the size of SOE share ownership is negatively associated with corporate performance. This study finds it is not significantly related to the long-term IPO performance on the SHSE. A plausible reason is that most SHSE listing IPOs are state owned.

7.7 Long-Term Specification Tests Results

7.7.1 Serial correlation test

First, the study examines autoregressive level 1 and autoregressive level 2 statistics to test the first and second order correlation. If ε_{it} is serially uncorrelated, we expect to reject at the first order but not at the second order. Table 7.10 provides the results for the long-term abnormal return. AR (1) and AR (2) for abnormal yearly return and board size explanatory variables are 0 and 0.4919. So the result rejects order 1 serial correlation, because p=0<0.05. The second order and original error are serially uncorrelated because p=0.4919>0.05. AR (1) and AT (2) for abnormal yearly return and board leadership explanatory variables are 0 and 0.5162. So the result rejects order 1 serial correlation, because p=0<0.05. The second order and original error are serially uncorrelated because p=0.5162>0.05. AR (1) and AR (2) for abnormal yearly return and board evaluation explanatory variables are 0 and 0.8465. So the result rejects order 1 serial correlation, because p=0<0.05. The second order and original error are serially uncorrelated because p=0.8465>0.05. AR (1) and AR (2) for abnormal yearly return and all explanatory variables are 0 and 0.8921. So the result rejects order 1 serial correlation, because p=0<0.05. The second order and original error are serially uncorrelated because p=0.8921>0.05. Therefore, there are no serial correlations in the original error ε_{it} in the abnormal yearly return estimations, as desired.

Table 7.11 provides the results for the long-term Tobin's Q. AR (1) and AR (2) for Tobin's Q and board size explanatory variables are 0 and 0.6640. So the result rejects order 1 serial correlation, because p=0<0.05. The second order and original error are serially uncorrelated because p=0.6640>0.05. AR (1) and AR (2) for Tobin's Q and board leadership explanatory variables are 0 and 0.9935. So the result rejects order 1 serial correlation, because p=0<0.05. The second order and original error are serially uncorrelated because p=0.9935>0.05. AR (1) and AR (2) for Tobin's Q and board evaluation explanatory variables are 0 and 0.6296. So the result rejects order 1 serial correlation, because p=0<0.05. The second order and original error are serially uncorrelated because p=0.6296>0.05. AR (1) and AR (2) for Tobin's Q and all explanatory variables are 0 and 0.4284. So the result rejects order 1 serial correlation, because p=0<0.05. The second order and original error are serially uncorrelated because p=0.4284>0.05. Therefore, there are no serial correlations in the original error ε_{it} in the Tobin's Q estimations, as desired.

Table 7.12 provides the results for the long-term ROA. AR (1) and AR (2) for ROA and board leadership explanatory variables are 0 and 0.6219. So the result rejects order 1 serial correlation, because p=0<0.05. The second order and original error are serially uncorrelated because p=0.6219>0.05. AR (1) and AR (2) for ROA and board evaluation explanatory variables are 0 and 0.6997. So the results do not reject order 1 serial correlation, because p=0<0.05. The second order and original error are serially uncorrelated because p=0.6997>0.05. AR (1) and AR (2) for ROA and all explanatory variables are 0 and 0.8119. So the results do not reject order 1 serial correlation, because p=0<0.05. The second order and original error are serially uncorrelated because p=0.8119>0.05. Therefore, there are no serial correlations in the original error ε_{it} in the ROA estimations, as desired.

7.7.2 Over-identification restrictions test

Second, the study uses J Statistics to test over identification restrictions. Tables 7.10, 7.11, and 7.12 present the J statistics for abnormal return, Tobin's Q and ROA respectively. The results indicate that all p-values are not significant at the 5% level, so the instruments are valid.

7.7.3 Joint significance test

The study employs the Wald Test to examine the significance for independent and control variables of each GLS and dynamic GMM estimations. Tables 7.10, 7.11, and 7.12 present the Wald Test for abnormal return, Tobin's Q and ROA respectively. The results indicate that all p-values are significant at the 1% level, so all independent and control variables can be included in those estimations.

7.8 Short-Term Final Estimations

The results presented in Section 5 indicate that CEO pay, number of supervisors, board meetings per year, supervisors meetings per year, insider shareholding, state shareholding, largest shareholding, number of committees, and abnormal first day return have significant endogeneity problems. Diagnostic testing for endogeneity using the DWH test indicated CEO experience, number of directors, supervisors meetings per year, legal person ownership, number of committees and Tobin's Q, and board meetings per year and ROA, all exhibit endogeneity. According to previous studies, a 2SLS model or a Dynamic GMM model are used to overcome the endogeneity problem. However, the use of 2SLS and Dynamic GMM models is not appropriate as the likely variables that might be suitable instrument variables are already included in the analysis, so finding instrument variables other than from this

dataset will be hard. The alternative of deleting the variables and using either an OLS or

GLS model is considered expedient.

7.8.1 Short-Term Final Estimations for Abnormal First Day Return

Table 7.13 Cross-Sectional GLS Regression/OLS Regression Results for Dependent Variable Abnormal First Day Return

Independent and Control Variable	Governance Compositions					
	Size	*Demographic*	*Leadership*	*Education*	*Evaluation*	*All*
	GLS	*OLS*	*GLS*	*OLS*	*GLS*	*GLS*
	Coefficient	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*
Constant	1.323***	1.387***	1.361***	1.351***	1.357***	1.435***
MD Age		-0.035				-0.045
MD Gender		-0.018				-0.012
MD Qualification				0.004		0.003
MD Experience					-0.003	-0.003
CEO Duality			-0.002			-0.004
Chairman Experience					-0.002	-0.001
Chairman Qualification				0.001		0.000
Number of Directors	0.064					0.061
Independent Director Percentage	0.050					0.045
Female Director Number		0.004				0.003
Legal Person Shareholding			-0.027*			-0.028*
Non-trading Shareholding			0.028			0.023
Size	-0.088***	-0.082***	-0.086***	-0.084***	-0.084***	-0.092***
Beta	0.046***	0.047***	0.047***	0.047***	0.047***	0.044***
Labour	-0.018*	-0.019*	-0.019*	-0.018	-0.018*	-0.018
Percentage change of Trading Volume	0.278***	0.247***	0.261***	0.248***	0.237***	0.271***
Percentage change of P/E Ratio	-0.463***	-0.430***	-0.454***	-0.434***	-0.420***	-0.452***
Industry	-0.050*	-0.049*	-0.048*	-0.052*	-0.050*	-0.051*
Property	-0.0131	-0.020	-0.0229	-0.022	-0.0190	-0.0215
Public Service	-0.0447	-0.046*	-0.0484	-0.047*	-0.0460	-0.0486
Composite	-0.024	-0.025	-0.020	-0.025	-0.022	-0.026
Year 1999	-0.300***	-0.289***	-0.297***	-0.292***	-0.288***	-0.291***
Year 2001	-0.081***	-0.085***	-0.088***	-0.085***	-0.083***	-0.077***
Year 2003	-0.117***	-0.103***	-0.104***	-0.103***	-0.100***	-0.113***
Year 2004	-0.363***	0.334***	-0.344***	-0.334***	-0.328***	-0.359***
R^2	0.447	0.445	0.4462	0.443	0.444	0.456

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

The results presented in Table 7.13 show the relationship of corporate governance and control variables with abnormal first day return. The table includes five governance estimations, viz size, demographics, leadership, education, and evaluation. This last estimation shows the estimated coefficients when all governance and control variables are included in the regression. The presence of heteroskedasticity necessitated the use of GLS estimation for size, leadership, evaluation and all variables regressions. Only one governance variable is observed as significantly impacting the abnormal first day return. The demographic and education regressions Hausman test results are not significant, indicating the study should use random effect model.

CEO and the abnormal first day return

CEO qualification is positively related to the abnormal first day return, while intuitively appealing, the correlation is not at a significant level. CEO age, gender, experience and duality are negatively related to the abnormal first day return and while intuitively appealing, the correlations are not at significant level.

Board and the abnormal yearly return

Chairman qualification is positively related to the abnormal first day return and while intuitively appealing, the correlation is not at significant level. Number of directors, the number of female directors, and the proportion of independent directors had been widely used in prior studies, but they are not significantly related to the abnormal first day return in this case. Chairman experience is not significantly related to abnormal first day return.

Ownership and the abnormal yearly return

The legal person shareholding is negatively related to the Tobin's Q at the 10% significant level. Non-trading ownership is negatively related to the abnormal first day return and while intuitively appealing, the correlation is also not at a significant level.

Control variables and the abnormal yearly return

The control variables in the form of size, change of the P/E ratio, years 1999, 2001, 2003, and 2004 are negatively related to the abnormal first day return at the 1% significant level. Beta and the change of trading volume are positively related to the abnormal first day return at the 1% significant level. Industry is negatively related to the abnormal first day return at the 10% significant level. The results indicate that investors prefer high risk IPOs in the short term.

7.8.2 Short-Term Final Estimations for Tobin's Q

Table 7.14 Cross-Sectional GLS Regression/OLS Regression Results for Dependent Variable Tobin's Q

	Governance Compositions					
	Size	Demographic	Leadership	Education	Evaluation	All
	GLS	GLS	GLS	GLS	GLS	GLS
Independent and Control Variable	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
Constant	10.979***	11.213***	10.798***	11.054***	9.890***	9.119***
MD Age		-0.257				-0.352
MD Gender		0.194				0.305
MD Qualification				0.052		0.031
Top Three Officer Pay					0.429***	0.353***
CEO Duality			-0.304**			-0.264*
Chairman Experience					-0.049	-0.043
Chairman Qualification				0.029		0.050
Independent Director Percentage	0.105					-0.089
Female Director Number		0.022				0.007
Number of Supervisors	0.011					0.022
Board Meeting per Year					-0.532**	-0.418*
Insider Shareholding			0.432**			0.064**
SOE Shareholding						-0.234
Non-trading Shareholding						2.420***
Largest Shareholding			0.525**			0.480*
Size	-0.837***	-0.814***	-0.802***	-0.850***	-0.950***	-1.072***
Beta	-0.035	-0.034	-0.028	-0.043	-0.001	-0.021
Labour	-0.244**	-0.243**	-0.277**	-0.227**	-0.149	-0.122
Percentage change of Trading Volume	4.179***	4.067***	4.018***	4.112***	4.296***	
Percentage change of P/E Ratio	-4.721***	-4.578***	-4.602***	-4.632***	-4.941***	-4.032***
Industry	0.3151	0.327	0.3428	0.285	0.3410	0.387*
Property	-0.1016	-0.131	-0.1251	-0.153	-0.0027	-0.0002
Public Service	0.2976	0.310	0.366*	0.276	0.3727	0.473**
Composite	0.499**	0.504**	0.573**	0.461*	0.536**	0.606**
Year 1999	-2.793***	-2.715***	-2.783***	-2.754***	-2.930***	-0.862***
Year 2001	-0.285**	-0.268*	-0.318**	-0.271*	-0.385***	-0.308***
Year 2003	-1.748***	-1.715***	-1.706***	-1.723***	-1.864***	0.0807
Year 2004	-4.109***	-4.010***	-3.994***	-4.045***	-4.327***	-1.835***
R^2	0.570	0.57	0.583	0.572	0.588	0.624

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

The results presented in Table 7.14 show the relationship of corporate governance and control variables with Tobin's Q. The table includes five governance estimations, viz size, demographics, leadership, education and evaluation. This last estimation shows the estimated

coefficients when all governance and control variables are included in the regression. The presence of heteroskedasticity necessitated the use of GLS estimation for all possible regressions. Six governance variables are observed as significantly impacting Tobin's Q.

CEO and Tobin's Q

Top management salary is positively related to Tobin's Q at the 1% significant level. This finding is consistent with Engel et al. (2002), Lee et al. (2008) and Nikbakht et al. (2007) who find that top management salary is positively related to IPO performance. The result is also consistent with Kren et al. (1997) and Lippert (1999) who indicate a positive relationship between CEO compensation and firm performance. A plausible reason is that most high income managers are from larger companies and those companies in China have relatively low risk and are more attractive to investors. Investors' behaviour may impact the share price and raise the level of Tobin's Q.

CEO duality is negatively related to the Tobin's Q at the 10% significant level. The finding is consistent with Balatbat et al. (2004), Chahine et al. (2009), Dempere (2007), Lam et al. (2008) and Braun et al. (2007) who indicate that CEO duality is significantly associated with IPO performance in Australia, some Arab countries, and US.

CEO gender, age and qualification are negatively related to Tobin's Q and while intuitively appealing, the correlations are not at a significant level.

Board and Tobin's Q

Board meetings per year are negatively related to Tobin's Q at the 10% significant level. The high frequency of board meetings may be because board efficiency is low. Chairman

qualification, number of female directors and number of supervisors are positively related to Tobin's Q and while intuitively appealing, the correlation is not at a significant level. Chairman experience and the proportion of independent directors are negatively related to Tobin's Q but is not at significant level.

Ownership and Tobin's Q

Insider ownership is positively related to Tobin's Q at the 5% significant level. This finding is consistent with prior studies. This may be because of the positive relationship between management shareholding and firm performance. Non-trading ownership is positively related to Tobin's Q at the 1% significant level. This may be because stable ownership is helpful to off-set the insensitive growth of the firms. Largest shareholder ownership is positively related to Tobin's Q at the 10% significant level. State ownership is negatively related to the Tobin's Q and while intuitively appealing, the correlation is not at a significant level.

Control variables and Tobin's Q

The control variables in the form of size, change of the P/E ratio, years 1999, 2001, and 2004 are negatively related to the Tobin's Q at the 1% significant level. Public service and composite are positively related to Tobin's Q at the 5% significant level. Industry is positively related to Tobin's Q, at the 10% significant level.

7.8.3 Short-Term Final Estimations for ROA

Table 7.15 Cross-Sectional GLS Regression/Dynamic GMM Regression Results for Dependent Variable ROA

	Governance Compositions					
	Size	*Demographic*	*Leadership*	*Education*	*Evaluation*	*All*
	OLS	OLS	GLS	OLS	GLS	GLS
Independent and Control Variable	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*
Constant	0.076**	0.135***	0.070**	0.087**	0.042	0.061
MD Age		-0.032				-0.034
MD Gender		0.002				0.002
MD Qualification				0.000		-0.001
MD Experience					-0.001	-0.001
Top Three Officer Pay					0.014***	0.014***
CEO Duality			-0.007			-0.006
Chairman Experience					0.000	0.000
Chairman Qualification				0.001		0.003
Number of Directors	0.003					0.009
Independent Director Percentage	-0.036**					-0.048***
Female Director Number		0.000				-0.001
Number of Supervisors	-0.002**					-0.002**
Supervisors Meeting per Year					-0.001	0.000
Insider Shareholding			0.022**			0.014
SOE Shareholding						-0.015
Legal Person Shareholding						-0.011
Non-trading Shareholding			0.059***			0.065***
Number of Committees	0.000					0.001
Largest Shareholding			0.022***			0.032***
Size	-0.001	-0.003	-0.006	-0.003	-0.007*	-0.008*
Beta	-0.009***	-0.009***	-0.010***	-0.010***	-0.008***	-0.008***
Labour	-0.002	-0.003	-0.003	-0.002	0.000	0.000
Percentage change of Trading Volume		-0.004	-0.007	-0.001	0.001	
Percentage change of P/E Ratio	0.041*	0.028	0.026	0.023	0.023	0.048*
Industry	0.009	0.009*	0.011**	0.010*	0.012**	0.012**
Property	0.004	0.006	0.0073	0.007	0.0096	0.0057
Public Service	0.010	0.012*	0.015**	0.012*	0.016**	0.016**
Composite	0.005	0.004	0.009	0.006	0.007	0.008
Year 1999	0.019**	0.023**	0.019*	0.020*	0.0204	0.018*
Year 2001	0.012*	0.012**	0.010**	0.011**	0.012*	0.015*
Year 2003		-0.001	0.0004	-0.001	-0.0041	
Year 2004	0.013	0.006	0.0073	0.004	0.0002	0.0162
R^2	0.095	0.078	0.1336	0.072	0.0979	0.1958

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

The results presented in Table 7.15 show the relationship of corporate governance and control variables with ROA. The table includes five governance estimations, viz size, demographics, leadership, education, and evaluation. This last estimation shows the estimated coefficients when all governance and control variables are included in the regression. The presence of heteroskedasticity necessitates the use of GLS estimation for leadership, evaluation and all governance variables regressions. Five governance variables are observed as significantly impacting ROA. The size, demographic, and education regressions Hausman test results are not significant, indicating the study should use the random effects model.

CEO and ROA

Top management salary is positively related to the long-term ROA at the 1% significant level. This finding is consistent with Engel et al. (2002), Lee et al. (2008) and Nikbakht et al. (2007) who find that top management salary is positively related to IPO performance. The result is also consistent with Kren et al. (1997) and Lippert (1999), who indicate a positive relationship between CEO compensation and firm performance. A plausible reason is that most high income managers are from larger companies and those companies in China have relatively low risk and offer better ROAs.

CEO gender is positively related to the ROA; while intuitively appealing, the correlation is not at a significant level. CEO age, gender, qualification, experience and duality are negatively related to the ROA and while intuitively appealing the correlations are not at significant levels.

Board and ROA

The proportion of independent directors is negatively related to the short-term ROA at the 1% significant level. This finding is opposite to some prior studies. Abdullah (2004), Balatbat et al.(2004), Bonn (2004), Bonn et al. (2004), Roosenboom et al. (2005) and Reddy et al. (2008) suggest outside directors are positively related to firm value in Holland, Australia and New Zealand, but have no influence in Japan and Malaysia. This may be attributable to investors' behaviour reflecting a concern that the independent directors lack a professional background and will not make a consistent contribution to the company. The number of supervisors is negatively related to the short-term ROA at the 5% significant level.

Chairman experience, qualification, number of directors, the supervisors meetings per year, and the number of committees are positively related to ROA and while intuitively appealing, the correlations are not at significant levels. The number of female directors is negatively related to ROA and while intuitively appealing the correlation is not at a significant level.

Ownership and ROA

The non-trading ownership is positively related to Tobin's Q at the 1% significant level. This may be because stable ownership is helpful to off-set the insensitive growth of the firms. Insider ownership is positively related to ROA, while intuitively appealing the correlation is not at a significant level. The state and legal person ownerships are negatively related to ROA and while intuitively appealing the correlations are not at significant levels. The largest ownership is positively related to the ROA at the 1% significant level.

Control variables and ROA

Size is negatively related to ROA at the 10% significant level. Beta is negatively related to ROA, at the 1% significant level. The change of P/E ratio, year 1999, year 2001 are positively related to the ROA at the 10% significant level. Industry and public service are positively related to the ROA, at the 5% significant level.

Insignificant independent variables

There are some very important variables in prior studies but they are not significantly related to short-term IPO performance in this SHSE study. CEO gender is one of the important variables in prior financial performance studies. Adams et al. (2009) find a positive relationship between female CEO and firm performance. But CEO gender is not significantly related to the long-term abnormal yearly return in this study. First, this may be attributable to investors' behaviour reflecting that a female CEO is not considered as an important signal. Second, according to the data description, only 2% of CEOs are female in the dataset. It is very hard to find the relationship between female CEOs and short-term IPO performance from such small sample.

Number of directors is another important variable in prior financial performance studies. Abdullah (2004), Bonn (2004), Bonn et al. (2004), Daily et al. (2005), Dwivedi et al. (2005), Staikouras et al. (2007), and Chang (2009) find that board size is negatively associated with firm performance in Japan, Taiwan and Europe, positively associated with firm performance in India, and has no influence in Australia, the US and Malaysia. Li and Naughton (2007) find that board size is positively associated with under-pricing in the short term in China. This study finds it is not significantly related to the short-term IPO performance in the SHSE.

Number of female directors is not significantly related to short-term IPO performance in this study. Bonn (2004), Bonn et al. (2004), Campbell et al. (2008), and Reddy et al. (2008) find that female directors are positively associated with firm performance in Spain, US, New Zealand and Australia, but have no influence in Japan. A plausible reason is that there are very few female directors in the SHSE, which makes it hard to find the relationship between female directors and short-term IPO performance from such a small sample.

Insider ownership is a third important variable in prior IPO and financial performance studies, but it is not significantly related to the short-term IPO performance in the SHSE. Chahine (2007) finds that block ownership is negatively associated with firm performance in the short-term in France. Reddy et al. (2008) indicate that block ownership has a positive effect on firm performance in New Zealand. This may be attributable to investors' behaviour reflecting that they are not concerned about insider ownership.

SOE ownership is a fourth important variable in prior Chinese IPO and financial performance studies. Gu (2003) indicates that state ownership is significantly negatively connected to short-term IPO performance in China. Chen (2001) indicates that the size of SOE share ownership is negatively associated with corporate performance. This study finds it is not significantly related to short-term IPO performance in the SHSE. A plausible reason is that most of SHSE listing IPOs are state owned.

7.9 Short –Term Specification Tests Results

Joint significance test

The study employs the Wald Test to examine the significance for independent and control variables of each OLS and GLS estimation. The results indicate that all p-values are significant at the 1% level, so all independent and control variables can be included in those estimations.

7.10 Conclusion

This chapter has analysed and explored the results of the corporate governance variables and long- and short-term IPO performance relationship in the Shanghai Stock Exchange dataset. The distribution of each variable has been checked to ensure it is approximately normal by median, standard deviation, skewness, and kurtosis. The study provides the descriptive statistics of variables after fixing missing observations and outliers, and also drops several independent variables. Diagnostic testing indicates the presence of heteroskedasticity and endogeneity in some of the regressions and a GLS or a dynamic GMM estimation is used.

In the long-term case, this study finds that chairman's experience is positively related to the abnormal yearly return. The proportion of independent directors and the board meetings per year are negatively related to the abnormal yearly return. CEO age is positively related to Tobin's Q. The number of directors is negatively related to Tobin's Q. Board meetings per year is negatively related to Tobin's Q. The proportion of independent directors is negatively related to Tobin's Q. The number of supervisors and the supervisors meetings per year are positively related to Tobin's Q. Top management salary is positively related to ROA. Chairman's qualification and the number of supervisors are positively related to ROA. The percentage of largest shareholding ownership is positively related to the abnormal yearly

return. This study applies a serial correlation test, over-identification test, and joint significance test for all long-term IPO performance regressions and the results show all models are statistically robust. According to the above results this study indicates that percentage of independent directors, board meetings per year, CEO age, number of directors, number of supervisors, supervisors meetings per year, top management salary, chairman's qualification, and percentage of largest shareholding ownership are good corporate governance practices for long-term IPO performance in Shanghai Stock Exchange. This provides support for not rejecting H1, H4, H6, H9, H11, H19, H22 and H23.

In the short-term case, this study finds that the legal person shareholding is negatively related to Tobin's Q. Top management salary is positively related to short-term Tobin's Q. CEO duality is negatively related to Tobin's Q. Board meetings per year is negatively related to Tobin's Q. Insider ownership and the non-trading ownership are positively related to Tobin's Q. Top management salary is positively related to long-term ROA. The proportion of independent directors is negatively related to the short-term ROA. The number of supervisors is negatively related to short-term ROA. The non-trading and the largest ownership are positively related to ROA. Overall, the panel data and cross sectional regressions explain the long-term and short-term IPO performance well. According to the above results this study indicates that legal person shareholding, top management salary, CEO duality, board meetings per year, insider ownership, non-trading ownership, percentage of independent directors, number of supervisors, and percentage of largest shareholding ownership are good corporate governance practices for short-term IPO performance in Shanghai Stock Exchange. This leads to not rejecting H9, H15 and H19.

CHAPTER 8 CORPORATE GOVERNANCE IMPACT ON IPO PERFORMANCE: SHENZHEN STOCK EXCHANGE

8.1 Introduction

Previous chapters offered the empirical results about the relationship between corporate governance mechanisms and the short and long term performance of IPOs on Shanghai Stock Exchange. This chapter presents the descriptive statistics, econometric tests and the empirical results and findings about the relationship between corporate governance mechanisms and performance of IPOs on the Shenzhen Stock Exchange.

Section 2 provides a discussion of the descriptive statistics and normality test results of the original and transformed variables. Section 3 provides the results of correlation tests. Section 4 provides the results of heteroskedasticity tests, multicollinearity tests, autocorrelation tests, and linearity tests. Section 5 provides the results of endogeneity tests. Section 6 provides the results of long-term OLS/GLS/Dynamic GMM tests. Section 7 provides the results of long-term specification tests. Section 8 provides the results of short-term OLS/GLS tests. Section 9 provides the results of short-term specification tests. Section 10 provides the conclusion of chapter 8.

8.2 Descriptive and Normality Analysis

The data sample includes 141 IPOs which have been post-listed on the SZSE from 1999 to 2004. There are 1,139 observations regarding long-term IPO performance and governance mechanisms which are compiled as unbalanced panel data. There are 141 observations regarding short-term IPO performance and governance mechanisms and these are compiled as cross sectional data. Section 2 gives the key descriptive statistics of the original sample,

including the number of observations, mean, median, standard deviation, minimum and maximum. The section also provides the results of normality tests, which indicate both skewness and kurtosis. The sample includes three dependent variables, twenty independent variables and twelve control variables. Eight variables are transformed to log values: two dependent variables, four independent variables, and two control variables.

8.2.1 Long-Term Data Descriptive Statistics

8.2.1.1 Descriptive Statistics of Long-Term Sample

The distribution of each variable was checked to ensure it was approximately normal by median, standard deviation, skewness, and kurtosis. The risk is those missing values and outliers significantly affect the sample data. The study provides the descriptive statistics of variables after fixing missing observations and outliers in Table 8.1.

Table 8.1 Summary of Dependent and Independent Variables Descriptive Statistics

Variable	Obs.	Mean	Median	Std.Dev.	Min	Max	Skewness	Kurtosis
Log Yearly Return	1139	0.477	0.473	0.073	0.228	0.693	0.275	5.165
Tobin's Q	1139	2.110	1.698	1.239	0.613	6.435	1.715	5.784
ROA	1139	0.032	0.032	0.060	-0.145	0.218	-0.450	5.488
Log MD Age	1139	1.657	1.653	0.066	1.415	1.826	0.031	2.848
MD Gender	1139	0.024	0.000	0.152	0.000	1.000	6.262	40.210
MD Qualification	1139	1.383	1.000	0.958	0.000	4.000	0.719	3.711
MD Experience	1139	2.281	2.000	2.163	0.000	11.000	1.142	4.084
Log Pay	1139	5.689	5.690	0.403	4.437	7.276	0.018	3.465
MD Duality	1139	0.834	1.000	0.372	0.000	1.000	-1.796	4.225
Chairman Experience	1139	3.235	3.000	2.612	0.000	11.000	0.681	2.678
Chairman Qualification	1139	1.307	1.000	0.968	0.000	4.000	0.773	3.688
Log Number of Directors	1139	0.969	0.954	0.108	0.301	1.255	-0.499	4.910
Independent Director Percentage	1139	0.297	0.333	0.124	0.000	0.600	-1.341	4.207
Female Director Number	1139	0.959	1.000	0.967	0.000	5.000	1.038	3.937
Number of Supervisors	1139	4.058	3.000	1.272	1.000	7.000	0.658	2.462
Log Board Meeting per Year	1139	0.889	0.903	0.155	0.301	1.255	-0.148	3.732
Supervisors Meeting per Year	1139	4.101	4.000	1.642	1.000	13.000	0.661	4.191
Insider Shareholding	1139	0.033	0.000	0.112	0.000	0.925	4.195	22.639
SOE Percentage	1139	0.327	0.360	0.270	0.000	0.850	0.017	1.516
Legal Person Percentage	1139	0.165	0.045	0.216	0.000	0.773	1.199	3.239
Un-trading Percentage	1139	0.524	0.576	0.196	0.000	0.894	-1.036	3.554
Number of Committees	1139	2.357	3.000	1.912	0.000	7.000	-0.247	1.347
Largest Shareholding	1139	0.417	0.408	0.172	0.081	0.850	0.155	2.128

There are key descriptions for all dependent and independent variables as shown in Table 8.1. Log abnormal yearly return includes 1139 observations and there is no missing value. The mean is 0.4770, which is slightly significantly above 0. This indicates those IPOs' longer-term performances are above other IPOs listed before 1999 and after 2004. The median is 0.4727 and the standard deviation is 0.0734. The abnormal return range is from 0.2278 to 0.6932. The skewness is 0.2748. It shows the dataset is normally distributed. The kurtosis is 5.1651; it also shows the difference between values is not very big. Table 8.1 also presents the mean, median, standard deviation, minimum, maximum, skewness, and kurtosis values for the entire long-term dependent and independent variables.

The mean of Tobin's Q is 2.1100, which is significantly above 1, indicating the market values of listed firms are far above current values, and it is more likely their stock prices are irrationally high and overvalued. The mean of ROA is 0.0324, the same as the average ROA of the Shanghai Stock Exchange. This value also indicates that most Chinese firms are surviving in a less beneficial situation, a result of the recent global economic recession. The mean of managing director age is 45.92; the value indicates that Chinese CEOs are relatively young compared with top government officials. This is the same as the SHSE case and the most likely explanation is that those relatively younger CEOs are from family-owned companies and working as CEO under their older generations' supervision. Supervisors meetings per year include 1139 observations. The mean is 4.1010. The value range is from 1 to 13 with some supervisors meeting just once a year. Compared with the statistics reported before data transformation, Tobin's Q, log of CEO age, CEO gender, CEO qualification, CEO experience, log of pay, chairman qualification, percentage of independent directors, number of supervisors, log of board meeting per year, supervisors meetings per year, and number of committees have been updated by filling the missing values. Abnormal yearly

return, log of abnormal yearly return, Tobin's Q, and ROA, have had outliers removed and given replacements. Overall, abnormal yearly return, log of abnormal yearly return, Tobin's Q, ROA, percentage of independent directors, log of board meeting per year, supervisors meetings per year, and number of committees provided more normal variants. Others offered similar normal variants. Overall, the results indicate that all data are normally distributed except CEO gender and insider shareholding. The updated data provides a better and more normal distributed dataset than the original sample dataset.

8.2.1.2 Long-Term Control Variables Descriptive Statistics

Table 8.2 Summary of Control Variables Descriptive Statistics

Variable	Obs.	Mean	Median	Std.Dev.	Min	Max	Skewness	Kurtosis
Log Size	1139	9.253	9.178	0.408	8.238	10.809	0.703	3.422
Beta	1139	1.006	1.035	0.211	0.228	1.681	-0.650	3.624
Log Labour	1139	3.260	3.249	0.531	0.602	4.816	-0.317	4.370
Percentage change of Listing	1139	0.063	0.064	0.058	-0.012	0.157	0.154	1.654
Percentage change of Capitalization	1139	0.433	-0.127	0.907	-0.579	2.221	0.807	2.295
Percentage change of Trading Volume	1139	0.722	0.024	1.336	-0.471	3.751	1.220	3.429
Percentage change of Accounts	1139	0.166	0.080	0.239	0.021	0.787	2.052	5.611
Percentage change of A-Shares	1139	-0.005	-0.006	0.027	-0.035	0.109	3.130	13.992
Percentage change of P/E Ratio	1139	0.279	-0.071	0.804	-0.760	1.752	0.507	1.886
Year 1999	1139	0.443	0	0.497	0	1	0.232	1.054
Year 2000	1139	0.392	0	0.489	0	1	0.441	1.194
Year 2004	1139	0.165	0	0.371	0	1	1.805	4.256

There are key descriptions for all control variables after fixing those missing values and outliers as shown in Table 8.2. The log size includes 1139 observations. The mean is 9.2526, the median is 9.1782 and the standard deviation is 0.4075. The value range is from 8.2378 to 10.8086. The skewness is 0.7032 and the kurtosis is 3.4221. Table 8.2 also presents the mean, median, standard deviation, minimum, maximum, skewness, and kurtosis values for the entire long-term control variables. The mean of beta is 1.0059; the average beta of sample is very close to the market beta. The mean of labour is 3470.076 employees. The value range is from four to 65,506 persons!

Overall, two control variables have been replaced by logarithm variables. Log of size and log of labour offer a more normal distribution than the original sample data outputs. The distributions of those variables were approximately normally distributed. The updated data provides a similar normal distributed dataset to the original sample dataset.

8.2.2 Short-Term Data Descriptive Statistics

8.2.2.1 Descriptive Statistics of Short-Term Sample

Table 8.3 Summary of Dependent and Independent Variables Descriptive Statistics

Variable	Obs.	Mean	Median	Std.Dev.	Min	Max	Skewness	Kurtosis
Log First Day Return	142	0.483	0.483	0.114	0.282	0.843	0.603	3.303
Tobin's Q	142	3.189	2.719	1.762	0.933	10.005	1.646	6.480
Log ROA	142	0.314	0.313	0.006	0.302	0.341	0.823	5.486
Log MD Age	142	1.655	1.644	0.074	1.505	1.813	0.107	2.019
MD Gender	142	0.028	0.000	0.166	0.000	1.000	5.703	33.529
MD Experience	142	0.958	1.000	1.003	0.000	4.000	0.847	3.172
MD Duality	142	0.775	1.000	0.419	0.000	1.000	-1.315	2.728
Chairman Experience	142	0.958	1.000	0.996	0.000	4.000	0.820	3.154
Log Number of Directors	142	0.965	0.954	0.109	0.699	1.230	-0.172	3.418
Independent Director Percentage	142	0.114	0.000	0.165	0.000	0.500	0.842	1.878
Female Director Number	142	0.887	1.000	0.900	0.000	3.000	0.691	2.561
Number of Supervisors	142	4.042	3.000	1.320	3.000	9.000	1.073	3.595
Insider Shareholding	142	0.070	0.000	0.163	0.000	0.886	2.585	9.355
SOE Percentage	142	0.343	0.393	0.292	0.000	0.850	-0.013	1.371
Legal Person Percentage	142	0.252	0.145	0.261	0.000	0.750	0.615	1.848
Un-trading Percentage	142	0.668	0.680	0.110	0.000	0.894	-2.184	13.294
Number of Committees	142	0.423	0.000	1.175	0.000	5.000	2.635	8.320
Largest Shareholding	142	0.464	0.474	0.181	0.093	0.850	-0.052	2.027

There are key descriptive statistics for all dependent and independent variables after fixing those missing values and outliers as shown in Table 8.3. Abnormal first day return included 142 observations and there is no missing value. The mean is 1.1745, which is 117.45% above the current day market return on average, indicating that IPOs' short-term performances are irrational in China. The abnormal return range is from -0.0840 to 8.3353, suggesting that

some IPOs had very strong short-term support during the listing date. Log abnormal first day return also includes 142 values. The mean is 0.4829, the median is 0.4827, and the standard deviation is 0.1142. The log abnormal return range is from 0.2824 to 0.8430. The skewness is 0.6029 and the kurtosis is 3.3031. Table 8.3 also presents the mean, median, standard deviation, minimum, maximum, skewness, and kurtosis values for the entire short-term dependent and independent variables. The mean of Tobin's Q is 3.1889, which is significantly above 1, indicating those stock prices are irrational high and overvalued. The median is 2.7189 and the standard deviation is 1.7617.

CEO qualification, top three officers' pay, chairman qualification, board meetings per year and supervisors meeting per year have been dropped as there were too many missing values. Tobin's Q, log of CEO age, CEO gender, CEO experience, percentage of independent directors, number of supervisors, and number of committees have been updated by filling the missing values. Abnormal first day return, log of abnormal first day return, ROA, and log of ROA had outliers removed and given replacements. After this, abnormal first day return, log of abnormal first day return, ROA, log of ROA, and number of committees provide more normal variants. Others offer similar normal variants. Overall, the results indicate that all data are normally distributed except CEO gender, insider shareholding, non-trading shareholding, and number of committees. So the updated data provide a better and more normal distributed dataset than the original sample dataset.

8.2.2.2. Short-Term Control Variables Descriptive Statistics

Table 8.4 Summary of Control Variables Descriptive Statistics

Variable	Obs.	Mean	Median	Std.Dev.	Min	Max	Skewness	Kurtosis
Log Size	142	9.046	8.989	0.344	8.459	10.478	1.139	4.732
Beta	142	1.051	1.077	0.175	0.428	1.374	-0.779	3.533
Log Labour	142	3.183	3.204	0.458	1.903	4.816	0.434	3.774
Percentage change of Listing	142	0.101	0.110	0.025	0.061	0.121	-0.893	1.958
Percentage change of Capitalization	142	0.369	0.339	0.360	-0.127	0.780	-0.191	1.627
Percentage change of Trading Volume	142	0.594	0.405	0.347	0.286	1.052	0.531	1.354
Percentage change of Accounts	142	0.168	0.152	0.105	0.029	0.291	-0.058	1.571
Percentage change of A-Shares	142	0.081	0.109	0.059	-0.014	0.125	-0.965	1.996
Percentage change of P/E Ratio	142	0.176	0.187	0.342	-0.319	0.544	-0.392	1.717
Year 1999	142	0.366	0	0.484	0	1	0.556	1.309
Year 2000	142	0.359	0	0.482	0	1	0.587	1.345
Year 2004	142	0.275	0	0.448	0	1	1.010	2.020

There are key descriptive statistics for all control variables as shown in Table 8.4. Log size includes 142 observations. The mean is 9.0460, the median is 8.9892 and the standard deviation is 0.3438. The value range is from 8.4589 to 10.4777. The skewness is 1.1385 and the kurtosis is 4.7323. Table 8.4 also presents the mean, median, standard deviation, minimum, maximum, skewness, and kurtosis values for the entire set of short-term control variables. The mean of beta is 1.0506; the average beta of sample is very close to the market beta.   Overall, two control variables have been replaced by logarithm variables. So the upgraded data provides a similar normal distributed dataset to the original sample dataset.

8.3 Pair Wise Correlation Test Results

8.3.1 Pair-Wise Correlation Test Results for Long-Term Sample

The correlation matrix for long-term variables shown as Table 12.3 in the appendices shows all the correlations between dependent and explanatory variables. Most independent and control variables are significantly correlated with the level of Tobin's Q and ROA; most of the control variables and some independent variables are significantly correlated with the

level of abnormal yearly return. These results indicate that corporate governance factors have less impact on stock performance than financial performance. SOE ownership is highly correlated with legal person ownership, a few market value-based control variables are also highly correlated with each other. So the study pays attention to those variables by carrying out further multicollinearity tests.

8.3.2 Pair-Wise Correlation Test Results for Short-Term Sample

The correlation matrix for long-term variables shown as Table 12.4 in the appendices shows all the correlations between dependent and explanatory variables. Most control variables are significantly correlated with the level of abnormal first day return, Tobin's Q, and ROA and some of independent variables are significantly correlated with the level of abnormal first day return, Tobin's Q, and ROA. These results indicate that corporate governance factors have relatively less impact on short-term IPO performance than on long-term IPO performance. Some of the market value-based control variables are highly correlated with each other. The study pays attention to those variables by carrying out further multicollinearity tests.

8.4 Multicollinearity/Heteroskedasticity/Panel and Cross Sectional Data OLS Regression Results

8.4.1 Multicollinearity/Heteroskedasticity/Panel Data OLS Regression Results for Long Term IPO Performance

The study tests the relationship between corporate governance and control variables using abnormal yearly return by panel data OLS regression. There are five attributions of governance estimations, viz size, demographics, leadership, education, and evaluation. This last estimation shows the estimated coefficients when all governance and control variables are included in the regression. A control variable in the form of a dummy for year 2004 is dropped by Stata automatically due to a multicollinearity problem. Each regression provides

similar results for independent and control variables, indicating that those results are not affected by addition or deletion of the variables that exhibited multicollinearity. The abnormal yearly return is significantly positively related to percentage of largest shareholding, and is significantly negatively related to top management pay, state share ownership, and legal person ownership. However, the results shown for all regressions are problematic as diagnostic testing indicates the presence of heteroskedasticity; GLS regressions or Dynamic GMM regressions are likely to be more robust.

The study tests the relationship between corporate governance and control variables using Tobin's Q by panel data OLS regression. The estimations include five governance estimations similar to the abnormal yearly return analysis. The same multicollinearity issues arise as reported for governance above. Tobin's Q is significantly positively related to top three officers' pay, chairman qualification, and supervisors meetings per year. Tobin's Q is significantly negatively related to the percentage of independent directors and board meeting per year. The regressions exhibit heteroskedasticity, so GLS regressions or Dynamic GMM regressions are likely to yield superior results in following analysis.

The study tests the relationship between corporate governance and control variables using ROA by panel data OLS regression. The same five governance estimations are used. Multicollinearity and heteroskedasticity are present. ROA is significantly positively related to CEO age, top three officer pay, chairman experience, and number of female directors, number of supervisors, percentage of non-trading shareholdings and percentage of largest shareholding. ROA is significantly negatively related to state share ownership. GLS regressions or Dynamic GMM regressions are investigated in the following analysis.

8.4.2 Multicollinearity/Heteroskedasticity/Panel Data OLS Regression Results for Short-Term IPO Performance

The study tested the relationship between corporate governance and control variables using abnormal first day return by panel data OLS regression. The estimations include five attributes of governance estimations, viz size, demographics, leadership, education, and evaluation. This last attribution shows the estimated coefficients when all governance and control variables are included in the regression. The control variables in the form of the percentage change of listing, percentage change of capitalization, percentage change of trading volume, percentage change of accounts, percentage change of A-shares, percentage change of P/E ratio, and dummy for year 2004 are dropped by Stata automatically due to a multicollinearity problem. Each regression provides similar results for independent and control variables, indicating that those results are not affected by addition or deletion of the variables which exhibited multicollinearity. The abnormal first day return is significantly positively related to number of directors. However, the results show for all regressions there is no heteroskedasticity; GLS regressions or 2SLS regressions are likely to be more robust.

The study tests the relationship between corporate governance and control variables using Tobin's Q by panel data OLS regression. The estimations include five governance estimations similar to the abnormal first day return analysis. The same multicollinearity issues arise as reported for governance above. Tobin's Q is significantly positively related to state share ownership and legal person share ownership. Tobin's Q is significantly negatively related to CEO gender. The regressions exhibit heteroskedasticity, so GLS regressions or 2SLS regressions are likely to yield superior results in following analysis.

The study tests the relationship of corporate governance and control variables with ROA by panel data OLS regression. The same five attributes of governance estimations are used. Multicollinearity and heteroskedasticity were present so GLS regressions or 2SLS regressions are investigated in the following analysis.

8.5 Endogeneity Tests

8.5.1 Endogeneity Test Results for Abnormal Yearly Return

Table 8.5 below presents the endogeneity test results between governance variables and dependent variable abnormal yearly return. The table includes five attributes of governance estimations; size, demographics, leadership, education and evaluation estimations. The last column shows the endogeneity test results when all governance and control variables are included in the regression. The presence of heteroskedasticity necessitates the use of GLS estimation for the regressions of "size", "demographics", "leadership" and "education". Diagnostic testing indicates the presence of heteroskedasticity and endogeneity in the "evaluation" and "all estimation" and a dynamic GMM estimation is used. However, the study selects almost all possible corporate governance variables, so finding instrument variables outside this dataset is difficult, hence the study uses dynamic panel GMM estimation.

Table 8.5 The DWH Test for Endogeneity of Abnormal Yearly Return

Independent and Control Variable	Governance Compositions					
	Size Coefficient	Demographic Coefficient	Leadership Coefficient	Education Coefficient	Evaluation Coefficient	All Coefficient
MD Age		0.173				0.294
MD Qualification				0.425		0.512
MD Experience					2.637	2.790*
Top Three Officer Pay					5.961**	5.724**
Chairman Experience					0.955	0.907
Chairman Qualification				2.584		3.092*
Number of Directors	0.452					0.506
Independent Director Percentage	0.081					0.031
Female Director Number		0.004				0.004
Number of Supervisors	0.151					0.230
Board Meeting per Year					0.361	0.285
Supervisors Meeting per Year					0.214	0.344
Insider Shareholding			0.277			0.186
SOE Shareholding			0.118			0.049
Legal Person Shareholding			0.950			0.719
Un-trading Shareholding			0.106			0.111
Number of Committees	0.775					1.331
Largest Shareholding			0.272			0.311

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

8.5.2 Endogeneity Test Results for Tobin's Q

Table 8.6 presents the endogeneity test results between governance variables and dependent variable Tobin's Q. The table includes five governance estimations, being size, demographics, leadership, education and evaluation estimations. The last column shows the endogeneity test results when all governance and control variables are included in the regression. There are no endogeneity problems for all board compositions with Tobin's Q, so the study employs GLS estimation for these regressions. The presence of heteroskedasticity necessitates the use of GLS estimation for the regressions of "size", "demographics", "leadership", "education', "evaluation" and "all estimation".

Table 8.6 The DWH Test for Endogeneity of Tobin's Q

Independent and Control Variable	Governance Compositions					
	Size Coefficient	*Demographic Coefficient*	*Leadership Coefficient*	*Education Coefficient*	*Evaluation Coefficient*	*All Coefficient*
MD Age		0.002				0.002
MD Qualification				0.511		0.500
MD Experience					0.170	0.049
Top Three Officer Pay					0.284	0.369
Chairman Experience					0.019	0.026
Chairman Qualification				0.254		0.141
Number of Directors	0.267					0.647
Independent Director Percentage	0.138					0.637
Female Director Number		0.227				0.276
Number of Supervisors	0.001					0.000
Board Meeting per Year					0.297	0.245
Supervisors Meeting per Year					0.648	0.938
Insider Shareholding			1.787			1.462
SOE Shareholding			0.073			0.073
Legal Person Shareholding			0.107			0.114
Un-trading Shareholding			0.350			0.271
Number of Committees	0.139					0.029
Largest Shareholding			0.228			0.441

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

8.5.3 Endogeneity Test Results for ROA

Table 8.7 presents the endogeneity test results between governance variables and dependent variable ROA. The table includes five governance estimations; size, demographics, leadership, education and evaluation estimations. The last column shows the endogeneity test results when all governance and control variables are included in the regression. The presence of heteroskedasticity necessitates the use of GLS estimation for the regressions of "size" and "demographics". Diagnostic testing indicates the presence of heteroskedasticity and endogeneity in the "leadership", "education", "evaluation" and "all estimation" and a dynamic GMM estimation is used. However, the study selects almost all possible corporate governance variables, so finding instrument variables outside this dataset is difficult hence the study uses dynamic panel GMM estimation.

Table 8.7 DWH Test for Endogeneity of ROA

Independent and Control Variable	Size Coefficient	Demographic Coefficient	Leadership Coefficient	Education Coefficient	Evaluation Coefficient	All Coefficient
			Governance Compositions			
MD Age		0.045				0.420
MD Qualification				0.281		0.097
MD Experience					1.151	1.505
Top Three Officer Pay					6.910***	3.460*
Chairman Experience					3.525*	3.427*
Chairman Qualification				7.856***		5.847**
Number of Directors	0.052					0.495
Independent Director Percentage	0.107					0.022
Female Director Number		0.068				0.638
Number of Supervisors	0.710					0.494
Board Meeting per Year					0.045	0.203
Supervisors Meeting per Year					0.052	0.029
Insider Shareholding			0.061			0.230
SOE Shareholding			0.133			0.383
Legal Person Shareholding			2.789*			3.693*
Un-trading Shareholding			4.854**			4.883**
Number of Committees	0.031					0.016
Largest Shareholding			2.123			1.295

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

Tables 8.8 and 8.9 present the conclusion of heteroskedasticity tests, endogeneity tests, and potential regression estimations of long- and short-term SZSE IPO performance models.

Table 8.8 The Heteroskedasticity, Endogeneity Results and Final Estimations of Long-Term Performance

Abnormal Yearly Return	Governance Compositions					
Specification Test	*Size*	*Demographic*	*Leadership*	*Education*	*Evaluation*	*All*
Heteroskedasticity	Yes	Yes	Yes	Yes	Yes	Yes
Endogeneity	No	No	No	No	Yes	Yes
Estimation	GLS	GLS	GLS	GLS	2SLS	Dynamic GMM

Tobin's Q	Governance Compositions					
Specification Test	*Size*	*Demographic*	*Leadership*	*Education*	*Evaluation*	*All*
Heteroskedasticity	Yes	Yes	Yes	Yes	Yes	Yes
Endogeneity	No	No	No	No	No	No
Estimation	GLS	GLS	GLS	GLS	GLS	GLS

ROA	Governance Compositions					
Specification Test	*Size*	*Demographic*	*Leadership*	*Education*	*Evaluation*	*All*
Heteroskedasticity	Yes	Yes	Yes	Yes	Yes	Yes
Endogeneity	No	No	Yes	Yes	Yes	Yes
Estimation	GLS	GLS	2SLS	2SLS	2SLS	Dynamic GMM

Table 8.9 The Heteroskedasticity, Endogeneity Results and Final Estimations of Short-Term Performance

Abnormal First Day Return	Governance Compositions				
Specification Test	*Size*	*Demographic*	*Leadership*	*Evaluation*	*All*
Heteroskedasticity	No	No	No	No	No
Endogeneity	No	No	No	Yes	Yes
Estimation	OLS	OLS	OLS	2SLS	GLS

Tobin's Q	Governance Compositions				
Specification Test	*Size*	*Demographic*	*Leadership*	*Evaluation*	*All*
Heteroskedasticity	Yes	Yes	Yes	Yes	Yes
Endogeneity	No	No	No	No	No
Estimation	GLS	GLS	GLS	GLS	GLS

ROA	Governance Compositions				
Specification Test	*Size*	*Demographic*	*Leadership*	*Evaluation*	*All*
Heteroskedasticity	No	No	No	No	Yes
Endogeneity	No	No	Yes	Yes	Yes
Estimation	OLS	OLS	2SLS	2SLS	GLS

8.6 Long-Term Final Estimations

8.6.1 Long-Term Final Estimations for Abnormal Yearly Return

Table 8.10 Panel Data GLS Regression/Dynamic GMM Regression Results for Dependent Variable Abnormal Yearly Return

Independent and Control Variable	Governance Attributions					
	Size	Demographic	Leadership	Education	Evaluation	All
	GLS	GLS	GLS	GLS	GMM	GMM
	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
Constant	0.481***	0.533***	0.492***	0.468***	0.487	0.537
L1					0.029	0.018
MD Age		-0.044				-0.119
MD Gender		0.006				-0.025
MD Qualification				0.003		0.008
MD Experience					-0.001	-0.002
Top Three Officer Pay					0.023	0.046
CEO Duality			0.000			-0.010
Chairman Experience					0.001	0.003
Chairman Qualification				0.000		0.018
Number of Directors	-0.009					0.011
Independent Director Percentage	-0.009					-0.125***
Female Director Number		0.001				-0.004
Number of Supervisors	0.001					-0.004
Board Meeting per Year					-0.015	-0.004
Supervisors Meeting per Year					-0.001	0.000
Insider Shareholding			-0.021			0.033
SOE Shareholding			-0.062**			-0.110**
Legal Person Shareholding			-0.065**			-0.078**
Non-trading Shareholding			0.044			-0.118
Number of Committees	0.000					0.000
Largest Shareholding			0.037***			0.091*
Size	0.007	0.008	0.005	0.008	-0.010	-0.011
Beta	-0.064***	-0.065***	-0.065***	-0.064***	-0.055***	-0.057***
Labour	-0.002	-0.001	-0.003	-0.002	0.001	0.005
Percentage change of Listing	0.202***	0.188***	0.181***	0.178***	0.139	0.136
Percentage change of Capitalization	0.163***	0.157***	0.162***	0.155***	0.042	0.048
Percentage change of Trading Volume	-0.064***	-0.064***	-0.062***	-0.063***	-0.017	0.005
Percentage change of Accounts	-0.048*	-0.037*	-0.050**	-0.036	0.017	-0.071
Percentage change of A-Shares	-0.152*	-0.130*	-0.148*	-0.123*	0.924**	1.343***
Percentage change of P/E Ratio	-0.086***	-0.082***	-0.088***	-0.081***	-0.022	-0.039
Year 1999	0.000	0.001	0.004	-0.001		
Year 2000	0.003	0.004	0.006	0.002		
R^2	0.097	0.098	0.103	0.098		
AR(1)					-8.667***	-8.549***
AR(2)					-1.112	-0.810

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J-statistics					76.068	112.900
Chi2	102.630***	99.080***	120.560***	97.170***	67.660***	81.000***

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

The results presented in Table 8.10 show the relationship of corporate governance and control variables with abnormal yearly return. The table includes five governance estimations, which are size, demographics, leadership, education, and evaluation estimations. The last column shows the estimation coefficients when all governance and control variables are included in the regression. The presence of heteroskedasticity necessitates the use of GLS estimation for the regressions of "size", "demographics", "leadership", and "education". Diagnostic testing indicates the presence of heteroskedasticity and endogeneity in "evaluation" and "all estimation" and a dynamic GMM estimation is used. Four governance variables and three control variables are observed as significantly impacting the abnormal yearly return.

CEO and the abnormal yearly return

CEO qualification and top management salary are positively related to the long-term abnormal yearly return. While intuitively appealing, the correlation is not at a significant level. CEO age, CEO gender, CEO experience, and CEO duality are negatively related to the abnormal yearly return, and again are not statistically significant.

Board and the abnormal yearly return

The percentage of independent directors is negatively related to the abnormal yearly return, and is significant at the 1% level. This finding runs contrary to some prior studies. Abdullah (2004), Balatbat et al. (2004), Bonn (2004), Bonn et al. (2004), Roosenboom et al. (2005) and Reddy et al. (2008) suggest outside directors are positively related to firm value in Holland, Australia and New Zealand, but have no influence in Japan and Malaysia. This may be attributable to investors' behaviour reflecting a concern that the independent directors lack

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a professional background and will not make a consistent contribution to the company. Chairman's qualification, chairman's experience, number of directors, supervisors meetings per year, and number of committees reflect a coefficient positively related with the abnormal yearly return though not at a significant level. The number of female directors, number of supervisors, and board meetings per year are negatively related with the abnormal yearly return and are not statistically significant.

Ownership and the abnormal yearly return

State ownership and legal person ownership are negatively related to the abnormal yearly return at the 5% significant level. These findings are consistent with previous studies by Chen (2001) and Gu (2003). They find that SOE ownership is significantly negatively connected to the IPO performance and corporate performance in China. Wang (2005) also indicates that a curvilinear relationship exists between legal person shareholding and operating performance. The percentage of largest shareholding ownership is positively related to the abnormal yearly return, at the 10% significant level. The likely explanation for this weakly significant finding relates to prior research. First, investors may believe that the large amount of the share ownership is an important signal that shows a large block holder has high expectations for the company, encouraging others to acquire shares. Second, a large amount of founder ownership indicates that the company has the potential to raise capital from the debt market as well as the stock market. Third, a rise in stock price may be the result of demand and purchase factions of large shareholders. Insider ownership is positively related to the abnormal yearly return, but not at a significant level. The non-trading ownership is negatively related to the abnormal yearly return, and is not significant. Insider ownership is an important variable in prior IPO and financial performance studies, but it is not significantly related to the long-term abnormal yearly return in this study.

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Control variables and the abnormal yearly return

Beta is negatively related to the abnormal yearly return at the 1% significant level. And the change of listing A-shares is positively related to the abnormal yearly return at the 1% significant level. These are consistent with investors being pleased with the small, low risk industry IPOs on the Shenzhen Stock Exchange.

8.6.2 Long-Term Final Estimations for Tobin's Q

Table 8.11 Panel Data GLS Regression Results for Dependent Variable Tobin's Q

	Governance Compositions					
	Size	*Demographic*	*Leadership*	*Education*	*Evaluation*	*All*
	GLS	GLS	GLS	GLS	GLS	GLS
Independent and Control Variable	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*
Constant	12.280***	11.619***	12.476***	12.422***	11.982***	10.618***
MD Age		0.461				0.362
MD Gender		-0.210				-0.095
MD Qualification				0.044		0.069
MD Experience					0.003	-0.005
Top Three Officer Pay					0.376**	0.389**
CEO Duality			-0.072			-0.074
Chairman Experience					-0.008	-0.001
Chairman Qualification				0.124**		0.100*
Number of Directors	0.552					0.422
Independent Director Percentage	-1.110***					-1.284***
Female Director Number		0.064*				0.043
Number of Supervisors	0.019					0.017
Board Meeting per Year					-0.479**	-0.359*
Supervisors Meeting per Year					0.027	0.038*
Insider Shareholding			-0.184			-0.216
SOE Shareholding			0.085			-0.014
Legal Person Shareholding			0.060			-0.049
Non-trading Shareholding			0.312			0.235
Number of Committees	-0.024					-0.020
Largest Shareholding			-0.241			-0.030
Size	-1.018***	-1.009***	-1.032***	-1.035***	-1.172***	-1.139***
Beta	-1.055***	-1.036***	-1.037***	-1.049***	-1.025***	-1.030***
Labour	-0.045	-0.040	-0.007	-0.022	-0.017	-0.035
Percentage change of Listing	0.411	-2.093***	-1.093	-2.252***	-2.677***	-0.503
Percentage change of Capitalization	-1.615***	-2.363***	-2.310***	-2.399***	-2.410***	-1.661***
Percentage change of Trading Volume	-0.239***	-0.119	-0.186*	-0.111	-0.077	-0.192*
Percentage change of Accounts	5.138***	6.327***	6.339***	6.364***	6.366***	5.169***
Percentage change of A-Shares	5.453***	8.697***	7.886***	8.774***	9.191***	6.149***
Percentage change of P/E Ratio	1.787***	2.293***	2.310***	2.317***	2.294***	1.794***
Year 1999	-0.327	-0.288	-0.314	-0.299*	-0.145	-0.290
Year 2000	-0.261	-0.235	-0.260	-0.235	-0.148	-0.248
Chi2	751.260***	685.470***	762.490***	703.130***	743.720***	910.100***
R^2	0.473	0.475	0.472	0.485	0.479	0.499

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

The results presented in Table 8.11 show the relationship of corporate governance and control variables with the long-term Tobin's Q. The table includes five governance estimations, which are size, demographics, leadership, education, and evaluation estimations. The last column shows the estimation coefficients when all governance and control variables are included in the regression. The presence of heteroskedasticity necessitates the use of GLS estimation for all regressions. Five governance variables and seven control variables are observed as significantly impacting the long-term Tobin's Q.

CEO and the long-term Tobin's Q

Top management salary is positively related to the long-term Tobin's Q at the 5% significant level. This finding is consistent with Engel et al. (2002), Lee et al. (2008) and Nikbakht et al. (2007) who find that top management salary is positively related to IPO performance. The result is also consistent with Kren et al. (1997) and Lippert (1999) who indicate a positive relationship between CEO compensation and firm performance. The current study finding goes further, noting that top management salary is also positively related with long-term Tobin's Q in China. A plausible reason is that most high income managers are from larger companies and those companies in China have relatively low risk and are more attractive to investors. The investors' behaviour may impact the share price and raise the level of Tobin's Q. CEO age and qualification are positively related to the long-term Tobin's Q, but while intuitively appealing, the correlation is not at a significant level. CEO gender, CEO experience, and CEO duality are negatively related to the long-term Tobin's Q, and again not at a statistically significant level. CEO gender and CEO duality are important variables in prior studies but they are not significantly related to the long-term Tobin's Q in this study.

Board and the long-term Tobin's Q

Chairman's qualification is positively related to the long-term Tobin's Q at the 10% significant level. The chairman's qualification is an important signal for Chinese investors who traditionally have general reverence for higher educated people and view them as having acquired more wisdom. The proportion of independent directors is negatively related to the long-term Tobin's Q, at the 1% significant level. This finding is opposite to some prior studies. Abdullah (2004), Balatbat et al.(2004), Bonn (2004), Bonn et al. (2004), Roosenboom et al. (2005) and Reddy et al. (2008) suggest outside directors are positively related to firm value in Holland, Australia and New Zealand, but have no influence in Japan and Malaysia. This may be attributable to investors' behaviour reflecting a concern that independent directors lack a professional background and will not make a consistent contribution to the company. Actually, many Chinese independent directors are government officials, academics, and also foreigners and perhaps they may not have a reasonable understanding of a company's current situation. Before 2002, a listed company only needed to include two independent directors on their board. The small number of independent directors means they are marginalized and find it hard to influence board decision-making.

The number of board meetings per year is negatively related to the long-term Tobin's Q at the 10% significant level. The high frequency of board meetings may indicate the board is inefficient or the company has a lot of issues. Supervisor meetings per year are positively related to the long-term Tobin's Q at the 10% significant level. As mentioned in section 5.5.2, supervisors play a key role. A more active supervisory group will help the company to achieve a better performance, protect shareholders' benefit, and reduce agency cost. The number of directors, number of supervisors and number of female directors are positively related to the long-term Tobin's Q, but not at a significant level. Chairman experience and

number of committees are negatively related to the long-term Tobin's Q, but not at statistically significant levels. The number of directors and the number of female directors are not significantly related to the long-term Tobin's Q in this study.

Ownership and long-term Tobin's Q

Inside ownership, SOE ownership, legal person ownership, and the largest shareholding are negatively related to the long-term Tobin's Q, but not at a significant level. Non-trading ownership is positively related to the long-term Tobin's Q but is not significant.

Control variables and long-term Tobin's Q

Size, beta, and change of capitalization are negatively related to the long-term Tobin's Q at the 1% significant level and the change of trading volume is negatively related to the long-term Tobin's Q at the 10% significant level. These results indicate that Chinese investors are likely to invest in small and low-risk industry IPOs. The change of investor accounts, the change of A-shares listing, and the change of P/E ratio are positively related to the long-term Tobin's Q at the 1% significant level. The results also indicate that one trading strategy used by investors is to hold the stocks and enjoy the capital gain when stock prices are rising.

8.6.3 Long-Term Final Estimations for ROA

Table 8.12 Panel Data GLS Regression/Dynamic GMM Regression Results for Dependent Variable ROA

	Governance Compositions					
	Size	*Demographic*	*Leadership*	*Education*	*Evaluation*	*All*
	GLS	*GLS*	*GMM*	*GMM*	*GMM*	*GMM*
Independent and Control Variable	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*
Constant	-0.170	-0.304**	-0.193	-0.144	-0.221	-0.456**
L1			0.325***	0.326***	0.324***	0.238***
MD Age		0.084**				0.109
MD Gender		-0.002				-0.005
MD Qualification				-0.009		-0.003
MD Experience					-0.001	-0.002
Top Three Officer Pay					0.000	0.014
CEO Duality			-0.003			0.001
Chairman Experience					-0.002	-0.001
Chairman Qualification				-0.003		-0.017
Number of Directors	0.026					-0.011
Independent Director Percentage	-0.029					0.019
Female Director Number		0.007***				0.009**
Number of Supervisors	0.003					0.011**
Board Meeting per Year					0.005	0.006
Supervisors Meeting per Year					0.000	0.000
Insider Shareholding			0.034			0.000
SOE Shareholding			-0.042			-0.069
Legal Person Shareholding			-0.045			-0.066
Non-trading Shareholding			0.037			0.061
Number of Committees	-0.001					-0.001
Largest Shareholding			0.076*			0.090**
Size	0.031**	0.033**	0.033	0.033	0.039	0.029
Beta	-0.052***	-0.050***	-0.065***	-0.062***	-0.068***	-0.064***
Labour	-0.007	-0.007	-0.019	-0.026*	-0.017	-0.016
Percentage change of Listing	-0.046	-0.153**	-0.016	-0.061	-0.036	0.008
Percentage change of Capitalization	-0.048**	-0.072***	-0.048*	-0.054**	-0.047*	-0.051**
Percentage change of Trading Volume	0.006	0.011**	0.009	0.011	0.008	0.002
Percentage change of Accounts	0.088***	0.125***	0.072**	0.082**	0.074**	0.101**
Percentage change of A-Shares	0.163**	0.280***	-0.074	0.032	-0.060	-0.276
Percentage change of P/E Ratio	0.038**	0.053***	0.037**	0.040**	0.037**	0.043***
Year 1999	-0.056***	-0.056***				
Year 2000	-0.048***	-0.047***				
R^2	0.167	0.173				
AR(1)			-6.136***	-5.935***	-5.728***	-6.401***
AR(2)			-1.867*	-1.896*	-1.874*	-1.947*
J-statistics			127.646	120.214	126.519	187.095
Chi2(Wald Test)	126.480***	125.500***	98.500***	91.550***	91.190***	137.360***

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

Table 8.12 presents the relationship of corporate governance and control variables with the long-term ROA. The table includes five governance estimations, which are size, demographics, leadership, education, and evaluation estimations. The last column shows the estimation coefficients when all governance and control variables are included in the regression. The presence of heteroskedasticity necessitates the use of GLS estimation for the regressions of "size" and "demographics". Diagnostic testing indicates the presence of heteroskedasticity and endogeneity in "leadership", "education", "evaluation" and "all estimation" and a dynamic GMM estimation is used. Three governance variables and four control variables are observed as significantly impacting the abnormal yearly return.

CEO and the long-term ROA

CEO age, CEO duality, and top management salary are positively related with the long-term ROA, but not at a significant level. CEO gender, CEO experience, and CEO qualification are negatively related with long-term ROA, and also not at significant levels.

Board and the long-term ROA

The number of female directors is positively related to long-term ROA at the 5% significant level. The finding is in line with Bonn (2004), Bonn et al. (2004), Campbell et al. (2008), and Reddy et al. (2008) who find that female directors are positively associated with firm performance in Spain, US, New Zealand and Australia. The prior studies suggest the existence of female directors will bring different ideas to the board, contributing to performance.

The number of supervisors is positively related to long-term ROA at the 5% significant level. More supervisors are likely to help the company to achieve a better performance reduce the

agency cost. The percentage of independent directors, the number of directors, and the number of supervisors are positively related with the long-term ROA, but not at a significant level. Chairman's experience, chairman qualification, number of supervisors and number of committees are negatively related with long-term ROA, but not at a significant level.

The number of directors and proportion of independent directors are not significantly related to the long-term ROA in this study.

Ownership and long-term ROA

The percentage of largest shareholding ownership is positively related to ROA at the 5% significant level. This may be because a state shareholder or a founder is likely to enhance monitoring of management and improve company performance. Inside ownership and the non-trading ownership are positively related with long-term ROA, but not at a significant level. SOE ownership and legal person ownership are positively related with long-term ROA but not at a significant level. Insider ownership and SOE ownership are not significantly related to the long-term ROA in this study.

Control variables and long-term ROA

Beta is negatively related to the long-term ROA at the 1% significant level. The change of capitalization is negatively related to long-term ROA at the 5% significant level. The change of A-shares listing is positively related to the long-term ROA at the 5% significant level. The change of P/E ratio is positively related to the long-term ROA at the 1% significant level.

Insignificant independent variables

There are some very important variables in the prior studies but they are not significantly related to the long-term IPO performance in this SZSE study. Adams et al. (2009) find a positive relationship between female CEO and firm performance. But CEO gender is not significantly related to the long-term IPO performance in this study. First, this may be attributable to investors' behaviour reflecting that female CEOs are not considered an important signal. Second, according to the descriptive data, only 2% CEOs are female in the dataset. It is very hard to find the relationship between female CEOs and long-term IPO performance from such a small sample.

Balatbat et al. (2004), Chahine et al. (2009), Dempere (2007), Lam et al. (2008) and Braun et al. (2007) indicate that CEO duality is significantly associated with IPO performance in Australia, Arab countries, and US. Lam et al. (2008) and Abdullah (2004) indicate that CEO duality has no significant effect on firm performance in Hong Kong and Malaysia. This study finds it is not significantly related to the long-term IPO performance in the SZSE. This may be because of the specific role of Chinese chairmen. In western developed listing firms, most chairmen are independent directors, but in many Chinese firms chairmen are also the legal persons or the largest shareholders of the company; their roles are not only monitoring the firm, they also act as manager in the company. Therefore, CEO duality is not deemed important.

The number of directors had been widely used in prior studies, but it is not significantly related to long-term IPO performance in this study Abdullah (2004); Bonn (2004); Bonn et al. (2004); Daily et al. (2005), Dwivedi et al. (2005); Staikouras et al. (2007), and Chang (2009) find that board size is negatively associated with firm performance in Japan, Taiwan

and Europe, but positively associated with firm performance in India, and has no influence in Australia, the US and Malaysia. Li and Naughton (2007) find that board size is positively associated with under-pricing in the short term in China. This may be attributable to the large board reflecting an ineffective leadership, and the small board reflecting a shortage of professional background.

Insider ownership is an important variable in prior IPO and financial performance studies, but it is not significantly related to the long-term IPO performance in this study. For developed market studies, Kroll et al. (2007), Nikbakht et al.(2007), Balatbat et al. (2004), and Roosenboom et al. (2005) suggest that managerial ownership is positively associated with IPO performance in the US, Australia and Holland. Dempere (2007), Firth (1997) and Reddy et al. (2008) indicate that insider ownership has a negative effect on firms' performance in New Zealand. For developing market studies, Chen et al. (2005) indicate the increase of managerial ownership decreases the stock performance in Taiwan. Chou et al. (2007) and Hu et al. (2008) indicate that the link between firm performance and managerial ownership is non-linear in China and Taiwan. This may be attributable to investors' behaviour reflecting that they are not concerned about insider ownership, or it may be because private companies have a higher level of insider ownership but also a lower level of ROA.

8.7 Long-Term Specification Tests Results

8.7.1 Serial correlation test

First, the study examines autoregressive level 1 and autoregressive level 2 statistics to test the first and the second order correlation. If ε_{it} is serially uncorrelated, we expect to reject at the first order but not at the second order. Table 8.10 provided the results for the long-term abnormal return. AR (1) and AR (2) for abnormal yearly return and board evaluation

explanatory variables are 0 and 0.2663. So the result rejects order 1 serial correlation, because p=0<0.05. The second order and original error are serially uncorrelated because p=0.2663>0.05. AR (1) and AR (2) for abnormal yearly return and all explanatory variables are 0 and 0.4179. So the result rejects order 1 serial correlation, because p=0<0.05. The second order and original error are serially uncorrelated because p=0.4179>0.05. Therefore, there are no serial correlations in the original error ε_{it} in the abnormal yearly return estimations, as desired.

Table 8.11 provides the results for long-term Tobin's Q. As all estimations are GLS models, the study does not need to provide the serial correlation tests.

Table 8.12 provides the results for the long-term ROA. AR (1) and AR (2) for ROA and board leadership explanatory variables are 0 and 0.0619. So the result rejects order 1 serial correlation, because p=0<0.05. The second order and original error are serially uncorrelated because p=0.0619>0.05. AR (1) and AR (2) for ROA and board education explanatory variables are 0 and 0.0659. So the result does not reject order 1 serial correlation, because p=0<0.05. The second order and original error are serially uncorrelated because p=0.0659>0.05. AR (1) and AR (2) for ROA and board evaluation explanatory variables are 0 and 0.0610. So the result does not reject order 1 serial correlation, because p=0<0.05. The second order and original error are serially uncorrelated because p=0.0610>0.05. AR (1) and AR (2) for ROA and all explanatory variables are 0 and 0.0618. So the result does not reject order 1 serial correlation, because p=0<0.05. The second order and original error are serially uncorrelated because p=0.0618>0.05. Therefore, there are no serial correlations in the original error ε_{it} in the ROA estimations, as desired.

8.7.2 Over-identification restrictions test

Second, the study uses J Statistics to test over identification restrictions. Tables 8.10, 8.11, and 8.12 present the J statistics for abnormal return, Tobin's Q and ROA respectively. The results indicate that all p-values are not significant at the 5% level, so the instruments are valid.

8.7.3 Joint significance test

The study employs the Wald Test to examine the significance for independent and control variables of each GLS and dynamic GMM estimations. Tables 8.10, 8.11, and 8.12 present the Wald Test for abnormal return, Tobin's Q and ROA respectively. The results indicate that all p-values are significant at the 1% level, so all independent and control variables can be included in those estimations.

8.8 Short-Term Final Estimations

The results presented in Section 5 indicate that CEO experience and abnormal first day return have significant endogeneity problems. Diagnostic testing for endogeneity, using the DWH test, indicates CEO experience and abnormal first day return, and chairman experience and ROA all exhibit endogeneity. According to previous studies, a 2SLS model or a Dynamic GMM model are used to overcome endogeneity problems. However, the use of 2SLS and Dynamic GMM models are not appropriate in this study as the likely variables that might be suitable instrument variables are already included in the analysis, so finding instrument variables other than from this dataset will be hard. The alternative of deleting the variables and using either OLS or GLS models is considered expedient.

8.8.1 Short-Term Final Estimations for Abnormal First Day Return

Table 8.13 Cross-Sectional GLS Regression/OLS Regression Results for Dependent Variable Abnormal First Day Return

	Governance Compositions				
	Size	*Demographic*	*Leadership*	*Evaluation*	*All*
	OLS	*OLS*	*OLS*	*GLS*	*GLS*
Independent and Control Variable	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*
Constant	1.083***	0.980**	1.041***	1.133***	0.941**
MD Age		0.027			0.016
MD Gender		-0.073			-0.074
MD Experience				0.001	
CEO Duality			-0.007		0.002
Chairman Experience				-0.006	0.000
Number of Directors	0.188**				0.177**
Independent Director Percentage	-0.068				-0.036
Female Director Number		0.015			0.011
Number of Supervisors	0.0055				0.005
Insider Shareholding			-0.077		-0.085
SOE Shareholding			-0.003		0.046
Legal Person Shareholding			0.012		0.058
Non-trading Shareholding			0.065		-0.007
Number of Committees	-0.009				-0.010
Largest Shareholding			-0.061		-0.058
Size	-0.079**	-0.053	-0.056	-0.065	-0.063**
Beta	0.014	0.017	0.015	0.016	0.014
Labour	-0.047**	-0.055**	-0.049**	-0.050**	-0.050**
Year 1999	0.064	0.098***	0.091***	0.095***	0.054
Year 2000	0.093**	0.130***	0.121***	0.131***	0.085**
R^2	0.297	0.274	0.264	0.253	0.327

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

The results presented in Table 8.13 show the relationship of corporate governance and control variables with abnormal first day return. The table includes four governance estimations, viz size, demographics, leadership, and evaluation. This last estimation shows the estimated coefficients when all governance and control variables are included in the regression. The presence of heteroskedasticity necessitates the use of GLS estimation for evaluation and all variables' regressions. Only one governance variable is observed as significantly impacting the abnormal first day return, which is number of directors. The size, demographic, and

leadership regressions Hausman test results are not significant, indicating the study should use the random effects model.

CEO and the abnormal first day return

CEO age is positively related to the abnormal first day return, and while intuitively appealing the correlation is not significant. CEO gender is negatively related to the abnormal first day return; while intuitively appealing, the correlation is not at a significant level. CEO duality is positively related to the abnormal first day return. Again, while intuitively appealing, the correlation is not at a significant level.

Board and the abnormal yearly return

The number of directors is positively related to the abnormal first day return at the 5% significant level. This finding is consistent with Li et al. (2007). Li and Naughton (2007) find that board size is positively associated with under-pricing in the short term in China. Abdullah (2004); Bonn (2004); Bonn et al. (2004); Daily et al. (2005), Dwivedi et al. (2005); Staikouras et al. (2007), and Chang (2009) find that board size is negatively associated with firm performance in Japan, Taiwan and Europe, but positively associated with firm performance in India, and has no influence in Australia, the US and Malaysia.

Chairman experience is positively related to the abnormal first day return; while intuitively appealing, the correlation is not at significant level. The number of female directors and proportion of independent directors has been widely used in prior studies but are not significant related to the abnormal first day return in this case. Number of supervisors and number of committees are not significantly related to the abnormal first day return in this case.

Ownership and the abnormal yearly return

State ownership and legal person ownership are positively related to the abnormal first day return, though intuitively appealing the correlations are not at significant levels. Insider ownership, non-trading ownership and largest ownership are negatively related to the abnormal first day return, and while intuitively appealing, the correlations are not significant.

Control variables and the abnormal yearly return

The control variables size and labour are negatively related to the abnormal first day return at the 5% significant level. Year 2000 is positively related to the abnormal first day return at the 5% significant level. These are consistent with investors being pleased with the small, low-risk industry IPOs on the Shenzhen Stock Exchange.

8.8.2 Short-Term Final Estimations for Tobin's Q

Table 8.14 Cross-Sectional GLS Regression/OLS Regression Results for Dependent Variable Tobin's Q

	Governance Compositions				
	Size	*Demographic*	*Leadership*	*Evaluation*	*All*
	OLS	*OLS*	*OLS*	*GLS*	*GLS*
Independent and Control Variable	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*
Constant	19.385***	19.932***	17.432***	18.975***	18.163***
MD Age		-0.991			-0.882
MD Gender		-1.763***			-1.752***
MD Experience				-0.005	-0.022
CEO Duality			0.062		0.082
Chairman Experience				0.076	0.079
Number of Directors	1.389				1.523**
Independent Director Percentage	-2.639*				-0.970
Female Director Number		0.101			0.040
Number of Supervisors	0.0308				0.010
Insider Shareholding			0.248		0.050
SOE Shareholding			1.170*		1.636*
Legal Person Shareholding			1.091*		1.505*
Non-trading Shareholding			1.703		1.046
Number of Committees	-0.096				-0.091
Largest Shareholding			-0.623		-0.908
Size	-1.668***	-1.466***	-1.591***	-1.572***	-1.571***
Beta	-1.193	-1.198	-1.189	-1.186	-1.258
Labour	-0.544*	-0.672**	-0.526*	-0.593**	-0.561*
Year 1999	0.819	1.897***	1.847***	1.884***	1.394*
Year 2000	1.254**	2.285***	2.246***	2.246***	1.698**
R^2	0.359	0.365	0.364	0.338	0.406

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

The results presented in Table 8.14 show the relationship of corporate governance and control variables with Tobin's Q. The table includes four governance estimations, viz size, demographics, leadership, and evaluation. This last estimation shows the estimated coefficients when all governance and control variables are included in the regression. The presence of heteroskedasticity necessitates the use of GLS estimation for all variables regression. Four governance variables are observed as significantly impacting Tobin's Q. The size, demographic, and leadership regressions Hausman test results are not significant, indicating the study should use the random effects model.

CEO and Tobin's Q

CEO gender is negatively related to the Tobin's Q at the 1% significant level. CEO gender is an important variable in prior financial performance studies. Adams et al. (2009) find a positive relationship between female CEO and firm performance. But CEO gender is negatively related to the short-term Tobin's Q in the current study. This may be due to the dataset. According to the descriptive data, only 2% of CEOs are female, so it is very hard to decide the relationship between female CEOs and short-term Tobin's Q from such small sample.

CEO age and CEO experience are negatively related to Tobin's Q, but the correlation is not at a significant level. CEO duality has also been widely used in prior studies, but it is not significantly related to Tobin's Q in this case.

Board and Tobin's Q

Number of directors is positively related to Tobin's Q at the 5% significant level. This finding is consistent with Li et al. (2007). Li and Naughton (2007) find that board size is positively associated with under-pricing in the short term in China. Abdullah (2004); Bonn (2004); Bonn et al. (2004); Daily et al. (2005), Dwivedi et al. (2005); Staikouras et al. (2007), and Chang (2009) find that board size is negatively associated with firm performance in Japan, Taiwan and Europe, but positively associated with firm performance in India, and has no influence in Australia, the US and Malaysia.

Chairman experience is positively related to Tobin's Q and while intuitively appealing, the correlation is not at significant level. The number of female directors, and the proportion of independent directors have been widely used in prior studies, but they are not significantly

related to Tobin's Q in this case. The number of supervisors and number of committees are not significantly related to the Tobin's Q in this case.

Ownership and Tobin's Q

State ownership and legal person ownership are positively related to Tobin's Q at the 1% significant level. This finding is different from several prior studies. Gu (2003) indicates that state ownership is significantly negatively connected to short-term IPO performance in China. Chen (2001) indicates that the size of SOE share ownership is negatively associated with corporate performance. A plausible reason is that most of SZSE listing IPOs are private rather than state owned.

Insider ownership and non-trading ownership are positively related to Tobin's Q and while intuitively appealing the correlation is not at a significant level. Largest shareholder ownership is negatively related to Tobin's Q, but not at a significant level.

Control variables and Tobin's Q

The control variables size and labour are negatively related to Tobin's Q at 1% and 10% significant levels respectively. Year 1999 is positively related to Tobin's Q at the 10% significant level. Year 2000 is positively related to the Tobin's Q at the 5% significant level. These are consistent with investors being pleased with the small, low- risk industry IPOs on the Shenzhen Stock Exchange.

8.8.3 Short-Term Final Estimations for ROA

Table 8.15 Cross-Sectional GLS Regression/Dynamic GMM Regression Results for Dependent Variable ROA

	Governance Compositions				
	Size	*Demographic*	*Leadership*	*Evaluation*	*All*
	OLS	*OLS*	*OLS*	*GLS*	*GLS*
Independent and Control Variable	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*
Constant	0.340***	0.348***	0.340***	0.339***	0.346***
MD Age		-0.005			-0.003
MD Gender		-0.002			-0.002
MD Experience				0.001	0.001
CEO Duality			0.001		0.001
Chairman Experience					
Number of Directors	-0.002				-0.001
Independent Director Percentage	-0.005				-0.004
Female Director Number		0.000			0.000
Number of Supervisors	0.0004				0.000
Insider Shareholding			0.003		0.004
SOE Shareholding			0.002		0.003
Legal Person Shareholding			0.000		0.002
Non-trading Shareholding			0.002		0.000
Number of Committees	0.000				0.000
Largest Shareholding			0.000		-0.001
Size	-0.002	-0.002	-0.002	-0.002	-0.002
Beta	-0.006**	-0.006**	-0.007**	-0.006**	-0.006**
Labour	0.000	-0.001	0.000	0.000	0.000
Year 1999	-0.003	-0.001	-0.001	-0.0007	-0.002
Year 2000	-0.006*	-0.003***	-0.003**	-0.004***	-0.005**
R^2	0.149	0.143	0.160	0.140	0.178

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

The results presented in Table 8.15 show the relationship of corporate governance and control variables with ROA. The table includes four governance estimations, viz size, demographics, leadership, and evaluation. This last estimation shows the estimated coefficients when all governance and control variables are included in the regression. The presence of heteroskedasticity necessitates the use of GLS estimation for evaluation and all governance variables regressions. No governance variables are observed as significantly impacting ROA.

The size, demographic, and leadership regressions Hausman test results are not significant, indicating the study should use the random effects model.

CEO and ROA

CEO age and gender are negatively related to the ROA; while intuitively appealing, the correlation is not at a significant level. CEO experience and duality are positively related to ROA, though the correlation is not at a significant level.

Board and ROA

Number of directors, number of female directors, the proportion of independent directors, and the number of supervisors are negatively related to the ROA and while intuitively appealing the correlations are not at significant levels.

Ownership and ROA

Insider, state and legal person ownerships are positively related to ROA, but the correlations are not at significant levels. Non-trading and largest ownerships are negatively related to ROA, and also not at significant levels.

Control variables and ROA

The control variable in the form of the dummy year 2000 is negatively related to the ROA at the 5% significant level. Beta is negatively related to ROA at the 5% significant level.

Insignificant independent variables

There are some very important variables in prior studies but they are not significantly related to the short-term IPO performance in this SZSE study. Balatbat et al. (2004), Chahine et al.

(2009), Dempere (2007), Lam et al. (2008) and Braun et al. (2007) indicate that CEO duality is significantly associated with IPO performance in Australia, Arab countries, and the US. Lam et al. (2008) and Abdullah (2004) indicate that CEO duality has no significant effect on firm performance in Hong Kong and Malaysia. This study finds it is not significantly related to the short-term IPO performance in the SZSE.

The proportion of independent directors is also not significantly related to the short-term IPO performance in SZSE. However, the proportion of independent directors is an important variable in prior financial performance studies. Abdullah (2004), Balatbat et al. (2004), Bonn (2004), Bonn et al. (2004), Roosenboom et al. (2005) and Reddy et al. (2008) suggest outside directors are positively related to firm value in Holland, Australia and New Zealand, but have no influence in Japan and Malaysia. A plausible reason is that many Chinese independent directors are government officials, academics, and also foreigners and perhaps they do not have a reasonable understanding of a company's current situation. This may be because these independent directors lack a professional background and are not seen as making a consistent contribution to the company.

The number of female directors is not significantly related to the short-term IPO performance in this study. Bonn (2004), Bonn et al. (2004), Campbell et al. (2008), and Reddy et al. (2008) find that female directors are positively associated with firm performance in Spain, US, New Zealand and Australia, but have no influence in Japan. A plausible reason is that there are very few female directors in the SZSE, which makes it hard to find any relationship between female directors and the short-term IPO performance from such a small sample.

Insider ownership is an important variable in prior IPO and financial performance studies, but it is not significantly related to short-term IPO performance in the SZSE. Chahine (2007) finds that block ownership is negatively associated with firm performance in the short-term in France. Reddy et al. (2008) indicate that block ownership has a positive effect on firm performance in New Zealand. This may be attributable to investors' behaviour reflecting that they are not concerned about insider ownership.

8.9 Short –Term Specification Tests Results

Joint significance test

The study employs the Wald Test to examine the significance for independent and control variables of each OLS and GLS estimation. The results indicate that all p-values are significant at the 1% level, so all independent and control variables can be included in those estimations.

8.10 Conclusion

This chapter has analysed and explored the results of the relationship between corporate governance variables and long- and short-term IPO performance on the Shenzhen Stock Exchange. The distribution of each variable has been checked to ensure if it is approximately normal by median, standard deviation, skewness, and kurtosis. The study provides the descriptive statistics of variables after fixing missing values and outliers, and also dropping several independent variables. Diagnostic testing indicates the presence of heteroskedasticity and endogeneity in some of the regressions and a GLS or a dynamic GMM estimation is used.

In the long-term case, this study finds that the percentage of independent directors, state ownership and legal person ownership are negatively related to the abnormal yearly return.

The percentage of largest shareholding ownership is positively related to the abnormal yearly return. Top management salary and chairman's qualification are positively related to long-term Tobin's Q. The proportion of independent directors is negatively related to long-term Tobin's Q. The number of board meetings per year is negatively related to long-term Tobin's Q while supervisor meetings per year is positively related to long-term Tobin's Q. The number of female directors, number of supervisors and percentage of largest shareholding are positively related to ROA. This study applies a serial correlation test, over-identification test, and joint significance test for all long-term IPO performance regressions and the results show all models are statistically robust. According to the above results the percentage of independent directors, SOE ownership, legal person ownership, top management salary, number of board meetings, number of female directors, number of supervisors, and percentage of largest shareholdings are good corporate governance practices for long-term IPO performance in Shenzhen Stock Exchange. This leads to non-rejection of H4, H9, H13, H19, H22 and H23.

In the short-term case, this study finds the number of directors is positively related to the abnormal first day return. CEO gender is negatively related to Tobin's Q. Number of directors is positively related to Tobin's Q. State ownership and legal person ownership are positively related to the Tobin's Q. This study applied the joint significance test for all short-term IPO performance regressions and the results show the significance of corporate governance variables in all models. According to the above results this study indicates that CEO gender, SOE ownership, legal person ownership, and number of directors are good corporate governance practices for short-term IPO performance in Shenzhen Stock Exchange. This leads to non-rejection of H7 and H21.

Overall, the panel data regressions explain the long-term IPO performance well, but the cross sectional regressions do not have reasonable explanation on the short-term IPO performance. In the short-term case, first day return, Tobin's Q and ROA have been investigated by the models, but just one independent variable is significantly related to abnormal first day return, and four variables are significantly related to Tobin's Q. This may be due to the lack of available information. In other words, the investors may not have had any opportunity to learn about specific corporate governance mechanisms before the IPO listing.

CHAPTER 9 CORPORATE GOVERNANCE IMPACT ON IPO PERFORMANCE: NEW ZEALAND STOCK EXCHANGE

9.1 Introduction

Previous chapters offer the empirical results for the relationship between corporate governance mechanisms and the short- and long-term performance of IPOs on the Shanghai and Shenzhen stock exchanges. This chapter presents the descriptive statistics, econometric tests and the empirical results and findings about the relationship between corporate governance mechanisms and performance of IPOs on the New Zealand Stock Exchange.

Section 2 provides a discussion of the descriptive statistics and normality test results of the original and transformed variables. Section 3 provides the results of correlation tests. Section 4 has the results of heteroskedasticity tests, multicollinearity tests, autocorrelation tests, and linearity tests. Section 5 provides the results of endogeneity tests. Section 6 has the results of long-term OLS/GLS/Dynamic GMM tests. Section 7 provides the results of long-term specification tests. Section 8 gives the results of short-term OLS/GLS tests. Section 9 provides the results of short-term specification tests. Section 10 provides the conclusion of chapter 9.

9.2 Descriptive and Normality Analysis

The data sample includes 82 IPOs post-listed on the NZSE from 1999 to 2004. There are 494 observations regarding long-term IPO performance and governance mechanisms which are compiled as unbalanced panel data. There are 82 observations regarding short-term IPO performance and governance mechanisms and these are compiled as cross sectional data. This section gives the key descriptive statistics of the original sample, including the number of observations, mean, median, standard deviation, minimum and maximum. The section also

provides the results of normality tests, which indicate skewness and kurtosis. The sample includes three dependent variables, eighteen independent variables and fifteen control variables.

9.2.1 Long-Term Data Descriptive Statistics

9.2.1.1. Descriptive Statistics of Long-Term Sample

The distribution of each variable has been checked to ensure it is approximately normal by median, standard deviation, skewness, and kurtosis. The risk is those missing values and outliers significantly affect the sample data. The study provides the descriptive statistics of variables after fixing missing values and outliers in the next tables. The study drops several independent variables, including CEO qualification (233 out of 494 are missing), chairman qualification (192 of 494 are missing), and board meeting per year (234 out of 494 are missing), as more than 30% of values are missing. The statistics suggest that abnormal first day return, Tobin's Q, ROA, and CEO salary offer are not normally distributed, exhibit skewness and a large kurtosis. The descriptive statistics indicate that a potential outlier problem may exist and a series of log transformations are appropriate.

Table 9.1 Summary of Dependent and Independent Variables Descriptive Statistics

Variable	Obs.	Mean	Median	Std.Dev.	Min	Max	Skewness	Kurtosis
Yearly Return	494	-0.058	-0.071	0.369	-1.039	1.229	0.481	3.933
Tobin's Q	494	1.627	1.214	0.966	0.169	5.355	1.502	4.979
ROA	494	-0.009	0.027	0.154	-0.502	0.480	-0.948	4.721
MD Gender	494	0.026	0.000	0.160	0.000	1.000	5.918	36.027
MD Experience	494	2.016	2.000	1.729	0.000	8.000	0.854	3.187
MD Salary	494	407271	299500	447625	2000	3981543	4.181	25.620
Log of MD Salary	494	5.450	5.476	0.402	3.301	6.600	-1.214	8.508
MD Duality	494	0.951	1.000	0.215	0.000	1.000	-4.199	18.634
Chairman Experience	494	2.146	2.000	1.779	0.000	9.000	0.786	3.236
Number of Directors	494	5.447	5.000	1.782	1.000	12.000	0.846	4.270
Independent Director Percentage	494	0.561	0.556	0.250	0.000	1.000	-0.252	2.870
Female Director Number	494	0.397	0.000	0.701	0.000	6.000	2.351	12.208
Block Ownership	494	0.953	1.000	0.211	0.000	1.000	-4.304	19.527
Insider Shareholding	494	0.440	0.443	0.250	0.000	0.952	0.019	1.948
Management Shareholding	494	0.249	0.159	0.249	0.000	0.880	0.774	2.297
Board Committee	494	0.743	1.000	0.438	0.000	1.000	-1.112	2.236
Remuneration Committee	494	0.609	1.000	0.488	0.000	1.000	0.239	-0.448
Independent Audit	494	0.988	1.000	0.110	0.000	1.000	-8.908	80.346
Largest Shareholding	494	0.262	0.199	0.187	0.001	0.836	0.980	3.089

There are key descriptions for all dependent and independent variables as shown in Table 9.1. Abnormal yearly return includes 494 observations and there are no missing values. The mean is -0.0582, which is slightly significantly below 0. This indicates those IPOs' longer-term performances are below other IPOs listed before 1999 and after 2004. The median is -0.0707 and the standard deviation is 0.9664. The abnormal return range is from -1.0386 to 1.2285. The skewness is 0.4805. It shows the dataset is normally distributed. The kurtosis is 3.9325, showing the differences between values are not huge. Table 9.1 also presents the mean, median, standard deviation, minimum, maximum, skewness and kurtosis values for all long-term dependent and independent variables.

The mean of Tobin's Q is 1.6267, which is slightly above 1, indicating the market values of listed firms are somehow above current values, and it is more likely their stock prices are overvalued. The CEO salary includes 494 observations. The mean is $330698.6 per year.

The median is $407270.7 per year. The standard deviation is 475295.6, which is extremely high. The value range is from 2000 dollars to 3.98 million dollars. The percentage of independent directors includes 494 observations. The mean is 0.5612, the median is 0.5556 and the standard deviation is 0.2504. It indicates more than half of directors are independent on New Zealand boards, which is much higher than Chinese exchanges.

Compared with the statistics reported before data transformation, ROA, CEO experience, CEO duality, CEO salary, chairman's experience, number of directors, percentage of independent directors, number of female directors, block ownership, insider ownership, management ownership, board committee, remuneration committee, and independent audit have been updated by filling the missing values. Most variables have had outliers removed and given replacements. This done, the descriptive statistics provide more normal variants. Overall, the results indicate that all data are normally distributed except dummy variables. The updated data provides a better and more normal distributed dataset than the original sample dataset. As the logarithm CEO salary result is more normally distributed than original CEO salary, the study still employs logarithm CEO salary as the dependent variable to test the longer-term IPO performance.

9.2.1.2. Long-Term Control Variables Descriptive Statistics

The distribution of each variable had been checked to ensure it is approximately normal by median, standard deviation, skewness and kurtosis. The risk is those missing values and outliers significantly affect the sample data. The descriptive statistics of variables, after missing values and outliers are adjusted, are reported in the following tables. The debt to equity ratio and size continue as non-normal variates exhibiting large skewness and kurtosis statistics.

Table 9.2 Summary of Control Variables Descriptive Statistics

Variable	Obs.	Mean	Median	Std.Dev.	Min	Max	Skewness	Kurtosis
D/E ratio	494	0.990	0.579	1.093	0.003	5.313	1.972	6.923
Size	494	54300000	19850000	84700000	0	413000000	2.226	7.265
Primary	494	0.081	0	0.273	0	1	3.072	10.438
Energy	494	0.020	0	0.141	0	1	6.813	47.421
Goods	494	0.168	0	0.374	0	1	1.776	4.154
Property	494	0.067	0	0.250	0	1	3.470	13.041
Service	494	0.429	0	0.496	0	1	0.286	1.082
Investment	494	0.235	0	0.424	0	1	1.251	2.566
Year 1999	494	0.101	0	0.302	0	1	2.644	7.993
Year 2000	494	0.298	0	0.458	0	1	0.886	1.784
Year2001	494	0.122	0	0.327	0	1	2.318	6.372
Year2002	494	0.087	0	0.282	0	1	2.930	9.584
Year 2003	494	0.170	0	0.376	0	1	1.757	4.086
Year 2004	494	0.223	0	0.417	0	1	1.333	2.774

There are key descriptions for all control variables as shown in Table 9.2. Compared with the statistics reported before data transformation, only the D/E ratio has been updated by removing outliers and giving replacements and then offering a normal distribution. The D/E ratio includes 494 observations. The mean is 0.9901. The median is 0.5788. The standard deviation is 1.0925. The value range is from 0.003 to 5.3133. The skewness is 1.9720 and the kurtosis is 6.9232, which are acceptable levels.

Size includes 494 observations. The mean is 54300000, the median is 19850000 and the standard deviation is 84700000. The value range is from 0 to 413000000. The skewness is 2.2255 and the kurtosis is 7.2651, which are acceptable levels.

The remaining control variables are all dummy variables. The distribution of each variable has been checked to ensure it is approximately normal by median, standard deviation, skewness, and kurtosis. Overall, no control variables have been replaced by logarithm variables. The distributions of those variables are approximately normally distributed.

9.2.2 Short-Term Data Descriptive Statistics

9.2.2.1 Descriptive Statistics of Short-Term Sample

The distribution of each variable has been checked to ensure it is approximately normal by median, standard deviation, skewness, and kurtosis. The risk is those missing values and outliers significantly affect the sample data. The study provides the descriptive statistics of variables after fixing missing values and outliers in the late tables. The study drops several independent variables, including CEO qualification (37 out of 82 are missing), chairman qualification (32 of 82 are missing), and board meeting per year (50 out of 82 are missing), as more than 30% of values are missing. From the results, Tobin's Q, ROA, the CEO salary, D/E ratio, and size offer abnormal distributed skewness and large kurtosis, so the descriptive statistics indicate that potential outlier problems may exist and a series of logarithm values' replacement may be necessary.

Table 9.3 Summary of Dependent and Independent Variables Descriptive Statistics

Variable	Obs.	Mean	Median	Std.Dev.	Min	Max	Skewness	Kurtosis
First Day Return	82	-0.022	-0.003	0.063	-0.254	0.089	-1.811	6.760
Tobin's Q	82	1.873	1.341	1.435	0.169	6.928	1.861	6.053
ROA	82	0.014	0.027	0.131	-0.402	0.386	-0.759	5.377
MD Gender	82	0.012	0.000	0.110	0.000	1.000	8.889	80.012
MD Experience	82	0.085	0.000	0.110	0.000	2.000	4.395	21.961
MD Salary	82	351635.6	235000	515549.9	6000	3662491	4.4583	25.6238
Log of MD Salary	82	5.333	5.371	0.425	3.778	6.564	-0.301	5.215
MD Duality	82	0.939	1.000	0.241	0.000	1.000	-3.670	14.465
Chairman Experience	82	0.037	0.000	0.189	0.000	1.000	4.937	25.371
Number of Directors	82	5.695	5.000	1.973	3.000	13.000	1.128	4.700
Independent Director Percentage	82	0.527	0.556	0.281	0.000	1.000	-0.232	2.310
Female Director Number	82	0.342	0.000	0.652	0.000	3.000	1.947	6.322
Block Ownership	82	0.927	1.000	0.262	0.000	1.000	-3.278	11.746
Insider Shareholding	82	0.406	0.404	0.269	0.000	0.911	0.019	1.716
Management Shareholding	82	0.252	0.169	0.248	0.000	0.973	0.815	2.351
Board Committee	82	0.683	1.000	0.468	0.000	1.000	-0.786	1.618
Remuneration Committee	82	0.537	1.000	0.502	0.000	1.000	-0.147	1.022
Independent Audit	82	0.988	1.000	0.110	0.000	1.000	-8.889	80.012
Largest Shareholding	82	0.279	0.199	0.204	0.001	0.785	0.781	2.549

There are key descriptions for all dependent and independent variables are shown in Table 9.3. Abnormal first day return includes 82 observations and there are no missing values. The mean is -0.0223, which is slightly significantly below 0. This indicates those IPOs' shorter-term performances are below other stocks in the market and a possible reason is that New Zealand investors are rational and the IPOs' prices are stable. The median is -0.0033 and the standard deviation is 0.0633. The abnormal return range is from 0.254 to 0.0886. The skewness is -1.8105. It shows the dataset is normally distributed. The kurtosis is 6.7598, showing the differences between values are not huge. Table 9.3 also presents the mean, median, standard deviation, minimum, maximum, skewness, and kurtosis values for the entire short-term dependent and independent variables. The mean of Tobin's Q is 1.8728, which is above 1, indicating the market values of listed firms are somehow above current values, and it is more likely their stock prices are overvalued.

Compared with the statistics reported before data transformation, CEO gender, CEO experience, CEO duality, CEO salary, chairman's experience, number of directors, percentage of independent directors, number of female directors, block ownership, insider ownership, management ownership, board committee, remuneration committee, independent audit, and the largest shareholding have been updated by filling the missing values. Most variables have had outliers removed and given replacements. This done, the descriptive statistics provide more normal variants. Overall, the results indicate that all data are normally distributed except dummy variables. The updated data provides a better and more normal distributed dataset than the original sample dataset. As the logarithm CEO salary result is more normally distributed than original CEO salary, the study still employs logarithm CEO salary as the dependent variable to test the longer-term IPO performance.

9.2.2.2. Short-Term Control Variables Descriptive Statistics

The distribution of each variable has been checked to ensure it is approximately normal by median, standard deviation, skewness, and kurtosis. The risk is those missing values and outliers significantly affect the sample data. The study provides the descriptive statistics of variables after fixing missing values and outliers in the following tables. From the results, the debt to equity ratio and size offer not very normally distributed skewness and also very huge kurtosis, so the descriptive indicates that the potential outlier problems may exist and a series of logarithm values' replacement is necessary.

Table 9.4 Summary of Control Variables Descriptive Statistics

Variable	Obs.	Mean	Median	Std.Dev.	Min	Max	Skewness	Kurtosis
D/E ratio	82	0.634	0.529	0.727	0.003	4.237	2.558	11.388
Size	82	20300000	14318250	27300000	5098	135000000	2.179	7.816
Primary	82	0.085	0	0.281	0	1	2.968	9.808
Energy	82	0.012	0	0.110	0	1	8.889	80.012
Goods	82	0.195	0	0.399	0	1	1.539	3.367
Property	82	0.061	0	0.241	0	1	3.670	14.465
Service	82	0.439	0	0.499	0	1	1.444	1.060
Investment	82	0.207	0	0.408	0	1	1.444	3.085
Year 1999	82	0.061	0	0.241	0	1	3.670	14.465
Year 2000	82	0.207	0	0.408	0	1	1.444	3.085
Year2001	82	0.098	0	0.299	0	1	2.713	8.358
Year2002	82	0.098	0	0.299	0	1	2.713	8.358
Year 2003	82	0.207	0	0.408	0	1	1.444	3.085
Year 2004	82	0.329	0	0.473	0	1	0.727	1.528

There are key descriptions for all control variables as shown in Table 9.4. Compared with the statistics reported before data transformation, only D/E ratio has been updated by removing outliers and giving replacements and then offering a normal distribution. The D/E ratio includes 82 observations. The mean is 0.6343. The median is 0.5285. The standard deviation is 0.7267. The value range is from 0.0031 to 4.2366. The skewness is 2.5575 and the kurtosis is 11.3880, which are acceptable levels.

Size includes 82 observations. The mean is 20300000, the median is 14318250 and the standard deviation is 27300000. The value range is from 5098 to 135000000. The skewness is 2.1786 and the kurtosis is 7.8162 which are both acceptable levels.

The rest of the control variables are all dummy variables. The distribution of each variable has been checked to ensure it is approximately normal by median, standard deviation, skewness, and kurtosis. Overall, no control variables have been replaced by logarithm variables. The distributions of those variables are approximately normally distributed.

9.3 Pair Wise Correlation Test Results

9.3.1 Pair-Wise Correlation Test Results for Long-Term Sample

The correlation matrix for long-term variables, shown as Table 12.5 in the appendices, gives all the correlations between dependent and explanatory variables. Most of independent and control variables are significantly correlated with the level of Tobin's Q and ROA, and most control variables and some independent variables are significantly correlated with the level of abnormal yearly return. These results indicate that corporate governance factors have less impact on stock performance than financial performance. SOE ownership is highly correlated with legal person ownership. Some of the market value based control variables are also highly correlated with each other, so the study pays attention to those variables making further multicollinearity tests necessary.

9.3.2 Pair-Wise Correlation Test Results for Long-Term Sample

The correlation matrix for short-term variables, shown as Table 12.6 in the appendices, shows all the correlations between dependent and explanatory variables. Most of the control variables are significantly correlated with the level of abnormal first day return, Tobin's Q,

and ROA, and some independent variables are significantly correlated with the level of abnormal first day return, Tobin's Q and ROA. These results indicate that corporate governance factors have relatively less impact on short-term IPO performance than on long-term IPO performance. A few market value based control variables are highly correlated with each other. The study pays attention to those variables making further multicollinearity tests necessary.

9.4 Multicollinearity/Heteroskedasticity/Panel and Cross Sectional Data OLS Regression Results

9.4.1 Multicollinearity/Heteroskedasticity/Panel Data OLS Regression Results for Long Term IPO Performance

The study tests the relationship between corporate governance and control variables using abnormal yearly return by panel data OLS regression. The estimations include four governance estimations, viz size, demographics, leadership, and evaluation. This last estimation shows the estimated coefficients when all governance and control variables are included in the regression. The control variables in the form of the dummy for investment and year 2004 are dropped by Stata automatically due to a multicollinearity problem. Each regression provides similar results for independent and control variables, indicating that those results are not affected by addition or deletion of the variables that exhibit multicollinearity. OLS results indicate that most of the governance variables have a positive relationship with the abnormal yearly return. The abnormal yearly return is significantly positively related to CEO experience, board committee, remuneration committee, and independent audit. It is significantly negatively related to CEO gender. However, the results shown for all regressions are problematic as diagnostic testing indicates the presence of heteroskedasticity; GLS regressions or Dynamic GMM regressions are likely to be more robust.

The study tests the relationship between corporate governance and control variables using Tobin's Q by panel data OLS regression. The estimations include five governance estimations similar to the abnormal yearly return analysis. The same multicollinearity issues arise as reported for governance above. OLS results indicate that most of the governance variables have a negative relationship to Tobin's Q. Tobin's Q is significantly positively related to insider shareholding and remuneration committee. It is significantly negatively related to the number of directors and the largest shareholding. The regressions exhibit heteroskedasticity, so GLS regressions or Dynamic GMM regressions are likely to yield superior results in subsequent analysis.

The study tests the relationship between corporate governance and control variables using ROA by panel data OLS regression. The same five governance estimations are used. Multicollinearity and heteroskedasticity are present. ROA is significantly positively related to the percentage of independent directors, remuneration committee, and independent audit. GLS regressions or Dynamic GMM regressions are investigated in the following analysis.

9.4.2 Multicollinearity/Heteroskedasticity/OLS Regression Results for Short-Term IPO Performance

The study tests the relationship between corporate governance and control variables using abnormal first day return by panel data OLS regression. The estimations include four governance estimations, viz size, demographics, leadership, and evaluation. This last attribution shows the estimated coefficients when all governance and control variables are included in the regression. The control variables in the form of the dummy for energy and year 1999 are dropped by Stata automatically due to a multicollinearity problem. Each regression provides similar results for independent and control variables, indicating that those

results are not affected by addition or deletion of the variables exhibiting multicollinearity. The abnormal first day return is significantly positively related to CEO salary and is significantly negatively related to CEO gender. However, the results show that all regressions are problematic as diagnostic testing indicates the presence of heteroskedasticity; GLS regressions or 2SLS regressions are likely to be more robust.

The study tests the relationship between corporate governance and control variables using Tobin's Q by panel data OLS regression. Five governance estimations similar to the abnormal first day return analysis are undertaken. The same multicollinearity issues arise as reported for governance above. Tobin's Q is significantly positively related with the management shareholding and the independent audit. It is significantly negatively related to the number of directors. The regressions exhibit heteroskedasticity, so GLS regressions or 2SLS regressions are likely to yield superior results in subsequent analysis.

The study tests the relationship of corporate governance and control variables with ROA by panel data OLS regression. The same five governance estimations are used. Multicollinearity and heteroskedasticity are present. ROA is significantly positively related to CEO gender, CEO salary, management ownership, and board committees. GLS regressions or 2SLS regressions are investigated in the following analysis.

9.5 Endogeneity Tests

9.5.1 Endogeneity Test Results for Abnormal Yearly Return

Table 9.5 below presents the endogeneity test results between governance variables and dependent variable abnormal yearly return. The table includes four governance estimations, which are size, demographics, leadership, and evaluation estimations. The last column shows

the endogeneity test results when all governance and control variables are included in the regression. The presence of heteroskedasticity necessitates the use of GLS estimation for the regressions of "size", "demographics" and "leadership". Diagnostic testing indicates the presence of heteroskedasticity and endogeneity in the "evaluation" and "all estimation" and a dynamic GMM estimation is used. However, the study selects almost all possible corporate governance variables, so finding instrument variables from outside this dataset will be hard. So the study uses dynamic panel GMM estimation. In the short term case, the 2SLS estimation is necessary.

Table 9.5 The DWH Test for Endogeneity of Abnormal Yearly Return

Independent and Control Variable	*Size Coefficient*	*Demographic Coefficient*	*Leadership Coefficient*	*Evaluation Coefficient*	*All Coefficient*
		Governance Compositions			
MD Experience				3.870**	4.360**
MD Salary				0.021	0.012
Chairman Experience				0.446	0.664
Number of Directors	0.751				0.569
Independent Director Percentage	0.037				0.088
Female Director Number		0.083			0.202
Insider Shareholding			1.217		0.553
Management Shareholding			0.491		0.010
Largest Shareholding			0.245		0.014

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

9.5.2 Endogeneity Test Results for Tobin's Q

Table 9.6 presents the endogeneity test results between governance variables and dependent variable Tobin's Q. The table includes four governance estimations, which are size, demographics, leadership, and evaluation estimations. The last column shows the endogeneity test results when all governance and control variables are included in the regression. The presence of heteroskedasticity necessitates the use of GLS estimation for the regressions of "size", "demographics", "evaluation" and "all estimation". Diagnostic testing indicates the presence of heteroskedasticity and endogeneity in the "leadership" and a dynamic GMM estimation is used. However, the study has selected almost all possible

corporate governance variables, so finding instrument variables other than from this dataset will be hard. So the study will use dynamic panel GMM estimation. In the short-term case, the 2SLS estimation is necessary.

Table 9.6 The DWH Test for Endogeneity of Tobin's Q

	Governance Compositions				
Independent and Control Variable	*Size Coefficient*	*Demographic Coefficient*	*Leadership Coefficient*	*Evaluation Coefficient*	*All Coefficient*
MD Experience				0.406	0.558
MD Salary				1.398	0.470
Chairman Experience				0.035	0.119
Number of Directors	2.646				2.514
Independent Director Percentage	2.434				1.004
Female Director Number		1.664			1.277
Insider Shareholding			2.063		0.864
Management Shareholding			4.997**		1.505
Largest Shareholding			5.015**		2.288

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

9.5.3 Endogeneity Test Results for ROA

Table 9.7 below presents the endogeneity test results between governance variables and dependent variable abnormal yearly return. The table includes four governance estimations, which are size, demographics, leadership, and evaluation estimations. The last column shows the endogeneity test results when all governance and control variables are included in the regression. The presence of heteroskedasticity necessitates the use of GLS estimation for the regressions of "size", "demographics", "leadership", and "evaluation". Diagnostic testing indicates the presence of heteroskedasticity and endogeneity in "all estimation" and a dynamic GMM estimation is used. However, the study has selected almost all possible corporate governance variables, so finding instrument variables other than from this dataset will be hard. So the study uses dynamic panel GMM estimation. In the short-term case, the 2SLS estimation is necessary.

Table 9.7 The DWH Test for Endogeneity of ROA

Independent and Control Variable	Governance Compositions				
	Size Coefficient	*Demographic Coefficient*	*Leadership Coefficient*	*Evaluation Coefficient*	*All Coefficient*
MD Experience				2.091	3.100**
MD Salary				0.859	0.970
Chairman Experience				2.240	3.125**
Number of Directors	0.201				0.221
Independent Director Percentage	1.101				1.433
Female Director Number		0.561			0.550
Insider Shareholding			0.569		0.359
Management Shareholding			2.571		0.250
Largest Shareholding			1.031		0.020

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

Tables 9.8 and 9.9 present the conclusion of heteroskedasticity tests, endogeneity tests, and potential regression estimations of long- and short-term NZSE IPO performance models.

Table 9.8 The Heteroskedasticity, Endogeneity Results and Final Estimations of Long-Term Performance

Abnormal Yearly Return	Governance Compositions				
Specification Test	*Size*	*Demographic*	*Leadership*	*Evaluation*	*All*
Heteroskedasticity	Yes	Yes	Yes	Yes	Yes
Endogeneity	No	No	No	Yes	Yes
Estimation	GLS	GLS	GLS	Dynamic GMM	Dynamic GMM

Tobin's Q	Governance Compositions				
Specification Test	*Size*	*Demographic*	*Leadership*	*Evaluation*	*All*
Heteroskedasticity	Yes	Yes	Yes	Yes	Yes
Endogeneity	No	No	No	No	No
Estimation	GLS	GLS	Dynamic GMM	GLS	GLS

ROA	Governance Compositions				
Specification Test	*Size*	*Demographic*	*Leadership*	*Evaluation*	*All*
Heteroskedasticity	Yes	Yes	Yes	Yes	Yes
Endogeneity	No	No	Yes	Yes	Yes
Estimation	GLS	GLS	GLS	GLS	Dynamic GMM

Table 9.9 The Heteroskedasticity, Endogeneity Results and Final Estimations of Short-Term Performance

Abnormal First Day Return	Governance Compositions				
Specification Test	*Size*	*Demographic*	*Leadership*	*Evaluation*	*All*
Heteroskedasticity	Yes	Yes	Yes	Yes	Yes
Endogeneity	No	No	No	Yes	Yes
Estimation	GLS	GLS	GLS	2SLS	GLS

Tobin's Q	Governance Compositions				
Specification Test	*Size*	*Demographic*	*Leadership*	*Evaluation*	*All*
Heteroskedasticity	Yes	Yes	Yes	Yes	Yes
Endogeneity	No	No	No	No	No
Estimation	GLS	GLS	GLS	GLS	GLS

ROA	Governance Compositions				
Specification Test	*Size*	*Demographic*	*Leadership*	*Evaluation*	*All*
Heteroskedasticity	Yes	No	No	No	Yes
Endogeneity	No	No	Yes	Yes	Yes
Estimation	GLS	OLS	2SLS	2SLS	GLS

9.6 Long-Term Final Estimations

9.6.1 Long-Term Final Estimations for Abnormal Yearly Return

Table 9.10 Panel Data GLS Regression/Dynamic GMM Regression Results for Dependent Variable Abnormal Yearly Return

	Governance Compositions				
	Size	*Demographic*	*Leadership*	*Evaluation*	*All*
	GLS	*GLS*	*GLS*	*GMM*	*GMM*
Independent and Control Variable	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*
Constant	-0.509***	0.000	-0.045	0.124	0.052
L1				-0.028	-0.020
MD Gender		-0.219**			-0.099*
MD Experience				0.063	0.068
MD Salary				-0.061	-0.094
CEO Duality			0.022		0.093
Chairman Experience				-0.006	-0.013
Number of Directors	0.016				0.035
Independent Director Percentage	-0.010				0.205
Female Director Number		-0.020			-0.094*
Block Shareholding			-0.061		-0.080
Insider Shareholding			0.047		-0.426
Management Shareholding			-0.052		-0.239
Board Committee	0.158***				0.125**
Remuneration Committee	-0.087*				-0.127
Independent Audit	0.310***				0.127***
Largest Shareholding			0.111		0.312
D/E Ratio	-0.007	-0.006	0.001	0.046	0.041
Size	0.000	0.000	0.000	0.000	0.000
Primary	-0.056	-0.082	-0.049		
Energy	0.038	0.026	0.018		
Goods	0.015	-0.005	0.036		
Property	-0.010	-0.014	0.011		
Service	0.007	-0.037	0.010		
Year 1999	0.071	0.039	0.055		
Year 2000	-0.027	-0.113**	-0.088*		
Year 2001	-0.025	-0.050	-0.040		
Year 2002	0.029	-0.029	-0.017		
Year 2003	0.030	0.022	0.039		
R^2	0.060	0.034	0.030		
AR(1)				-4.778***	-4.784***
AR(2)				-0.506	0.072
J-statistics				44.418**	45.564**
Chi2				4.920***	22.480***

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

The results presented in Table 9.10 show the relationship of corporate governance and control variables with abnormal yearly return. The table includes four governance estimations, which are size, demographics, leadership, and evaluation estimations. The last column shows the estimation coefficients when all governance and control variables are included in the regression. The presence of heteroskedasticity necessitates the use of GLS estimation for the regressions of "size", "demographics", and "leadership". Diagnostic testing indicates the presence of heteroskedasticity and endogeneity in "evaluation" and "all estimation" and a dynamic GMM estimation is used. Four governance variables are observed as significantly impacting the abnormal yearly return.

CEO and the abnormal yearly return

CEO gender is negatively related to the abnormal yearly return, at the 5% significant level. This finding is offset by previous studies by Adams et al. (2009), who indicate a positive relationship between female CEO and firm performance. The possible solution is the lack of female CEOs in New Zealand. According to the data descriptive statistics, only 2.63% CEOs are female in the dataset. A small sample may not provide enough female CEO success stories to the public, and this may be attributable to investors' behaviour reflecting that a female CEO is not considered an important signal for positive firm performance.

CEO experience and duality are positively related to the long-term abnormal yearly return and while intuitively appealing the correlation is not at significant level. CEO salary is negatively related to the abnormal yearly return, and again is not at a statistically significant level.

Board and the abnormal yearly return

The number of female directors is positively related to the abnormal yearly return and is significant at the 10% level. This finding is consistent with previous studies by Bonn (2004), Bonn et al. (2004), Campbell et al. (2008), and Reddy et al. (2008), who find female directors are positively associated with firm performance in Spain, US, New Zealand and Australia, but has no influence in Japan. The prior studies suggest female directors will bring different ideas to the board contributing to firm performance.

Board committee is positively related to the abnormal yearly return and is significant at the 5% level. The independent audit is positively related to the abnormal yearly return and is significant at the 1% level. These findings are consistent with the previous studies by Jain et al. (2005) and Reddy et al. (2008). According to Jain et al. (2005), investment in a high quality audit leads to a significantly lower post-IPO failure rate in the US. Reddy et al. (2008) indicate that an audit committee has a positive effect on firm performance in New Zealand.

The number of directors has been widely used in prior studies, but it is not significantly related to the long-term abnormal yearly return in this study. The proportion of independent directors is also not significantly related to the long-term abnormal yearly return in this study. Chairman's experience reflects a coefficient positively related with the abnormal yearly return but not at a significant level.

Ownership and the abnormal yearly return

Management ownership and insider ownership are important variables in prior IPO and financial performance studies, but they are not significantly related to the long-term abnormal yearly return in the NZSE. Block ownership is an important variable in prior IPO and

financial performance studies, but it is not significantly related to the long-term abnormal

yearly return in the NZSE.

9.6.2 Long-Term Final Estimations for Tobin's Q

Table 9.11 Panel Data GLS Regression/Dynamic GMM Regression Results for Dependent Variable Tobin's Q

	Governance Compositions				
	Size	*Demographic*	*Leadership*	*Evaluation*	*All*
	GLS	*GLS*	*GMM*	*GLS*	*GLS*
Independent and Control Variable	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*
Constant	2.129***	1.467***	1.278**	0.803	1.740
L1			0.533***		
MD Gender		0.486			0.335
MD Experience				-0.025	-0.041
MD Salary				0.147	0.105
CEO Duality			0.214		-0.218
Chairman Experience				-0.018	-0.017
Number of Directors	-0.064**				-0.098***
Independent Director Percentage	0.029				-0.142
Female Director Number		-0.035			-0.008
Block Shareholding			-0.245		-0.169
Insider Shareholding			0.212		0.959***
Management Shareholding			-0.794		0.349
Board Committee	-0.061				-0.059
Remuneration Committee	0.2676*				0.268*
Independent Audit	-0.344				-0.175
Largest Shareholding			-0.876*		-0.765*
D/E Ratio	-0.023	-0.008	-0.024	-0.003	-0.027
Size	0.000	0.000	0.000	0.000	0.000
Primary	-0.555*	-0.516*		-0.630**	-0.433*
Energy	-0.578*	-0.388		-0.537	-0.459
Goods	0.190	0.271		0.199	0.274
Property	-0.779***	-0.756***		-0.857***	-0.675**
Service	-0.063	0.017		-0.083	-0.009
Year 1999	0.192	0.140		0.121	0.186
Year 2000	0.290	0.360*		0.387*	0.371*
Year 2001	0.521	0.476		0.472	0.513
Year 2002	0.340	0.419		0.363	0.295
Year 2003	0.349	0.352		0.365	0.459*
R^2	0.117	0.107		0.099	0.180
AR(1)			-3.154***		
AR(2)			-0.675		
J-statistics			80.459**		
Chi2	64.150***	66.130***	52.280***	60.440***	102.380***

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

The results presented in Table 9.11 show the relationship of corporate governance and control variables with the long-term Tobin's Q. The table includes four governance estimations, which are size, demographics, leadership, and evaluation estimations. The last column shows the estimation coefficients when all governance and control variables are included in the regression. The presence of heteroskedasticity necessitates the use of GLS estimation for the regressions of "size", "demographics", and "evaluation", and "all estimation". Diagnostic testing indicates the presence of heteroskedasticity and endogeneity in "leadership" and a dynamic GMM estimation is used. Four governance variables and four control variables are observed as significantly impacting the long-term Tobin's Q.

CEO and the long-term Tobin's Q

CEO gender and CEO salary are positively related with long-term Tobin's Q, but not at a significant level. CEO experience and CEO duality are negatively related with the long-term Tobin's Q and not at a significant level.

Board and the long-term Tobin's Q

The number of directors is negatively related to the Tobin's Q and is significant at the 1% level. Abdullah (2004), Bonn (2004), Bonn et al. (2004), Daily et al. (2005), Dwivedi et al. (2005), Staikouras et al. (2007), and Chang (2009) find that board size is negatively associated with firm performance in Japan, Taiwan and Europe, but positively associated with firm performance in India, and has no influence in Australia, the US and Malaysia. This study finds it is negatively significantly related to the long-term Tobin's Q on the NZSE. This may be because a large board reflects ineffective leadership.

The remuneration committee is positively related to Tobin's Q and is significant at the 10% level. The number of female directors is negatively related to the Tobin's Q, but not at a significant level. The proportion of independent directors is also not significantly related to the long-term abnormal yearly return in this study. Chairman's experience reflects a coefficient negatively related with the abnormal yearly return but not at a significant level.

Ownership and long-term Tobin's Q

Insider ownership is positively related to long-term Tobin's Q, significant at the 1% level. This may be because investors' behaviour reflects that insider shareholding is considered an important signal for any potential share price rise. For developed market studies, Kroll et al. (2007), Nikbakht et al.(2007), Balatbat et al. (2004), and Roosenboom et al. (2005) suggest that managerial ownership is positively associated with IPO performance in the US, Australia and Holland. Dempere (2007), Firth (1997) and Reddy et al. (2008) indicate that insider ownership has a negative effect on firms' performance in New Zealand.

Largest shareholding is negatively related to the long-term Tobin's Q and is significant at the 10% level. This finding is consistent with a previous study by Chahine (2007). He finds that block ownership is negatively associated with firm performance in the long-term in France. A plausible reason is that large share ownership is seen as a potential risk for agency problems. Block ownership is negatively related to the long-term Tobin's Q, but not at a significant level.

Control variables and long-term Tobin's Q

Primary industry is negatively related to the long-term Tobin's Q at the 10% significant level and the property industry is negatively related to the long-term Tobin's Q at the 5% significant level. These results indicate that New Zealand investors are likely to invest in

other industries' IPOs. The year 2000 and year 2003 are positively related to the long-term Tobin's Q, at the 10% significant level.

9.6.3 Long-Term Final Estimations for ROA
Table 9.12 Panel Data GLS Regression/Dynamic GMM Regression Results for Dependent Variable ROA

	Governance Compositions				
	Size	*Demographic*	*Leadership*	*Evaluation*	*All*
	GLS	*GLS*	*GLS*	*GLS*	*GMM*
Independent and Control Variable	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*
Constant	-0.171***	-0.002	0.038	-0.139	-0.114
L1					0.323***
MD Gender		-0.029*			-0.132**
MD Experience				0.002**	0.015**
MD Salary				0.027	0.003
CEO Duality			-0.023		0.024
Chairman Experience				-0.004	0.007
Number of Directors	-0.002				0.004
Independent Director Percentage	0.060				0.071
Female Director Number		0.012			-0.017
Block Shareholding			-0.024		-0.003
Insider Shareholding			0.004		0.036
Management Shareholding			0.035		-0.020
Board Committee	0.004				-0.003
Remuneration Committee	0.037**				0.030**
Independent Audit	0.123**				0.058**
Largest Shareholding			-0.033		-0.132
D/E Ratio	-0.028***	-0.021**	-0.022**	-0.020**	-0.018*
Size	0.000***	0.000***	0.000***	0.000***	0.000
Primary	0.002	-0.017	-0.002	-0.013	
Energy	0.017	0.022	0.047	0.016	
Goods	-0.042	-0.045	-0.040	-0.042	
Property	0.053*	0.036	0.048	0.033	
Service	0.045	0.028	0.035	0.031	
Year 1999	0.013	0.014	0.017	0.016	
Year 2000	-0.031	-0.049	-0.048	-0.039	
Year 2001	-0.010	-0.016	-0.019	-0.015	
Year 2002	-0.008	-0.010	-0.001	-0.013	
Year 2003	-0.012	-0.001	-0.003	-0.001	
R^2	0.180	0.144	0.139	0.153	
AR(1)					-2.690
AR(2)					2.023
J-statistics					88.001**
Chi2					64.470***

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

Table 9.12 presents the relationship of corporate governance and control variables with the long-term ROA. The table includes four governance estimations, which are size, demographics, leadership, and evaluation estimations. The last column shows the estimation coefficients when all governance and control variables are included in the regression. The presence of heteroskedasticity necessitates the use of GLS estimation for the regressions of "size", "demographics", "leadership", and "evaluation". Diagnostic testing indicates the presence of heteroskedasticity and endogeneity in "all estimation" and a dynamic GMM estimation is used. Four governance variables and one control variable are observed as significantly impacting the abnormal yearly return.

CEO and the long-term ROA

CEO gender is negatively related with the long-term ROA at the 5% significant level. Adams et al. (2009) find a positive relationship between female CEO and firm performance. According to the data's descriptive statistics, only 2.63% CEOs are female in the dataset. It is very hard to find the relationship between female CEOs and ROA from such a small sample. CEO experience is positively related with long-term ROA at the 5% significant level. This may be because experienced CEOs have more knowledge of firms than those less experienced CEOs.

CEO salary is positively related with the long-term ROA, but not at a significant level. CEO duality is negatively related with long-term Tobin's Q, and not at a significant level.

Board and the long-term ROA

The remuneration committee is positively related to the ROA and is significant at the 5% level. The independent audit is positively related to ROA and is significant at the 5% level.

These findings are consistent with the previous studies by Jain et al. (2005) and Reddy et al. (2008). According to Jain et al. (2005), investment in a high quality audit leads to a significantly lower post-IPO failure rate in the US. Reddy et al. (2008) indicate that an audit committee has a positive effect on firm performance in New Zealand.

The number of directors has been widely used in prior studies, but it is not significantly related to the long-term ROA in this study. The number of female directors is negatively related to the ROA, but not at the significant level. The proportion of independent directors is also not significantly related to the long-term ROA in this study.

Ownership and long-term ROA

Insider ownership is positively related to the long-term ROA, but not at the significant level. The largest shareholding is negatively related to the long-term ROA, but not at the significant level. Block ownership is negatively related to the long-term ROA, but not at a significant level.

Control variables and long-term ROA

D/E ratio is negatively related to the long-term ROA at the 10% significant level. These results indicate that high debt companies are likely to face a higher failure risk.

Insignificant independent variables

There are some very important variables in prior studies but they are not significantly related to the long-term IPO performance in this NZSE study. CEO duality is not significantly related to the long-term IPO performance in the New Zealand market. This may be because in the sample dataset only 6.1% companies have CEO duality on the NZSE. So it is very hard

to discover the impact of CEO duality on the abnormal yearly return. Balatbat et al. (2004), Chahine et al. (2009), Dempere (2007), Lam et al. (2008) and Braun et al. (2007) indicate that CEO duality is significantly associated with IPO performance in Australia, Arab countries and the US. Lam et al. (2008) and Abdullah (2004) indicate that CEO duality has no significant effect on firm performance in Hong Kong and Malaysia.

CEO salary had been widely used in prior studies, but it is not significantly related to the long-term IPO performance in this study. Engel et al. (2002), Lee et al. (2008) and Nikbakht et al. (2007) find that top management salary is positively related to IPO performance in the US. Kren & Kerr (1997) and Lippert (1999) indicate a positive relationship between CEO compensation and firm performance. Compared with Chinese listed companies the top managers of larger companies in New Zealand are more likely to have higher salary, but those companies may not be attractive to investors, as they have relatively low risk and stock prices are more stable, but may not be outperforming others in ROA.

Number of directors has been widely used in prior studies, but it is not significantly related to the long-term IPO performance in this study. Abdullah (2004), Bonn (2004), Bonn et al. (2004), Daily et al. (2005), Dwivedi et al. (2005), Staikouras et al. (2007), and Chang (2009) find that board size is negatively associated with firm performance in Japan, Taiwan and Europe, positively associated with firm performance in India and has no influence in Australia, the US and Malaysia. This study finds it is not significantly related to the long-term abnormal yearly return in the NZSE. This may be because a large board reflects ineffective leadership, and a small board reflects a shortage of directors with professional backgrounds.

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The proportion of independent directors is also not significantly related to the long-term IPO performance in this study. The proportion of independent directors is an important variable in prior financial performance studies. Abdullah (2004), Balatbat et al. (2004), Bonn (2004), Bonn et al. (2004), Roosenboom et al. (2005) and Reddy et al. (2008) suggest outside directors are positively related to firm value in Holland, Australia and New Zealand, but have no influence in Japan and Malaysia. This study finds it is not significantly related to the long-term abnormal yearly return in the NZSE.

Management ownership is also not significantly related to long-term IPO performance in the New Zealand market. For the developed market studies, Kroll et al. (2007), Nikbakht et al.(2007), Balatbat et al. (2004), and Roosenboom et al. (2005) suggest that managerial ownership is positively associated with IPO performance in the US, Australia and Holland. This study finds that management ownership is not significantly related to the long-term abnormal yearly return in the NZSE. This may be attributed to investors' behaviour reflecting they are not concerned about insider ownership.

9.7 Long-Term Specification Tests Results

9.7.1 Serial correlation test

First, the study examines autoregressive level 1 and autoregressive level 2 statistics to test the first and the second order correlation. If ε_{it} is serially uncorrelated, we expect to reject at the first order but not at the second order. Table 9.10 provides the results for the long-term abnormal return. AR (1) and AR (2) for abnormal yearly return and board evaluation explanatory variables are 0 and 0.6129. So the result rejects order 1 serial correlation, because $p=0<0.05$. The second order and original error are serially uncorrelated because $p=0.6129>0.05$. AR (1) and AR (2) for abnormal yearly return and all explanatory variables

are 0 and 0.9424. So the result rejects order 1 serial correlation, because p=0<0.05. The second order and original error are serially uncorrelated because p=0.9424>0.05. Therefore, there are no serial correlations in the original error ε_{it} in the abnormal yearly return estimations, as desired.

Table 9.11 provides the results for the long-term Tobin's Q. AR (1) and AR (2) for Tobin's Q and board leadership explanatory variables are 0.0016 and 0.4998. So the result rejects order 1 serial correlation, because p=0.0016<0.05. The second order and original error are serially uncorrelated because p=0.4998>0.05. Therefore, there are no serial correlations in the original error ε_{it} in the Tobin's Q estimations, as desired.

Table 9.12 provides the results for the long-term ROA. AR (1) and AR (2) for ROA and all explanatory variables are 0.0071 and 0.1431. So the result rejects order 1 serial correlation, because p=0<0.05. The second order and original error are serially uncorrelated because p=0.1431>0.05. Therefore, there are no serial correlations in the original error ε_{it} in the ROA estimations, as desired.

9.7.2 Over-identification restrictions test

Second, the study examines J Statistics to test over identification restrictions. Tables 9.10, 9.11 and 9.12 present the J statistics for abnormal return, Tobin's Q and ROA respectively. The results indicate that all p-values are not significant at the 5% level, so the instruments are valid.

9.7.3 Joint significance test

The study employs the Wald Test to examine the significance for independent and control variables of each GLS and dynamic GMM estimations. Tables 9.10, 9.11 and 9.12 present the Wald Test for abnormal return, Tobin's Q and ROA respectively. The results indicate that all p-values are significant at the 1% level, so all independent and control variables can be included in those estimations.

9.8 Short-Term Final Estimations

The results presented in Section 5 indicate that CEO experience and abnormal first day return have significant endogeneity problems. Diagnostic testing for endogeneity, using the DWH test, indicate management shareholding and Tobin's Q, largest shareholding and Tobin's Q, CEO experience and ROA, chairman experience and ROA, all exhibit endogeneity. According to previous studies, a 2SLS model or a Dynamic GMM model are used to overcome endogeneity problems. However, the use of 2SLS and Dynamic GMM models are not appropriate as the likely variables that might be suitable instrument variables are already included in the analysis, so finding instrument variables other than from this dataset will be hard. The alternative of deleting the variables and using either OLS or GLS model is considered expedient.

9.8.1 Short-Term Final Estimations for Abnormal First Day Return

Table 9.13 Cross-Sectional GLS Regression/OLS Regression Results for Dependent Variable Abnormal First Day Return

Independent and Control Variable	Size GLS Coefficient	Demographic GLS Coefficient	Leadership GLS Coefficient	Evaluation GLS Coefficient	All GLS Coefficient
	Governance Compositions				
Constant	-0.104*	-0.092***	-0.058	-0.374***	-0.389**
MD Gender		-0.058*			-0.077*
MD Salary				0.343**	0.061***
CEO Duality			-0.021		-0.010
Chairman Experience				-0.039	-0.024
Number of Directors	-0.002				-0.006
Independent Director Percentage	0.017				-0.006
Female Director Number		0.003			-0.001
Block Shareholding			0.003		-0.027
Insider Shareholding			-0.033		-0.031
Management Shareholding			-0.017		-0.003
Board Committee	-0.009				-0.026
Remuneration Committee	-0.001				0.017
Independent Audit	0.025				0.007
Largest Shareholding			0.020		0.029
D/E Ratio	-0.001	-0.001	0.000	-0.004	-0.002
Size	0.000	0.000	0.000	0.000**	0.000*
Primary	0.084***	0.083***	0.088***	0.138***	0.136***
Goods	0.063**	0.064***	0.070**	0.119***	0.118***
Property	0.069**	0.078***	0.075***	0.139***	0.128**
Service	0.077***	0.077***	0.082***	0.130***	0.122***
Investment	0.076**	0.086***	0.084***	0.138***	0.132**
Year 2000	-0.051	-0.053	-0.062*	-0.0354	-0.0449
Year 2001	0.009	0.006	0.005	0.0079	0.0264
Year 2002	0.020	0.021	0.022	0.0162	0.0252
Year 2003	0.000	0.003	-0.005	0.0023	0.0130
Year 2004	0.022	0.021	0.015	0.019	0.029
R^2	0.194	0.193	0.205	0.265	0.322

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

The results presented in Table 9.13 show the relationship of corporate governance and control variables with abnormal first day return. The table includes four governance estimations, viz size, demographics, leadership, and evaluation. This last estimation shows the estimated coefficients when all governance and control variables are included in the regression. The

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presence of heteroskedasticity necessitates the use of GLS estimation for all regressions. Only two governance variables are observed as significantly impacting the abnormal first day return.

CEO and the abnormal first day return

CEO gender is negatively related to the abnormal first day return at the 10% significant level. This finding is offset by the previous study by Adams et al. (2009) who indicate a positive relationship between female CEO and firm performance. The possible solution is the lack of female CEOs in New Zealand. According to the data's descriptive statistics, only 1.22% CEOs are female in the dataset. A small sample may not provide enough female CEO success stories to the public, and this may be attributed to investors' behaviour reflecting that female CEOs are not considered an important signal for positive firm performance.

CEO salary is positively related to abnormal first day return at the 1% significant level. This finding is consistent with Engel et al. (2002), Lee et al. (2008) and Nikbakht et al. (2007) who find that top management salary is positively related to IPO performance in the US. Kren & Kerr (1997) and Lippert (1999) indicate a positive relationship between CEO compensation and firm performance. A plausible reason is that most high income managers are from larger companies, those companies have relatively low risk and they are more attractive to investors as a short-term investment prospective.

CEO duality is positively related to the abnormal first day return and while intuitively appealing, the correlation is not at a significant level.

Board and the abnormal yearly return

Chairman experience is negatively related to the abnormal first day return, and again, while intuitively appealing, the correlation is not at a significant level. Number of directors, number of female directors, and the proportion of independent directors has been widely used in prior studies, but they are not significantly related to the abnormal first day return in this case. Board committee, remuneration committee and independent audit are also not significantly related to the abnormal first day return in this case.

Ownership and the abnormal yearly return

Block ownership, management ownership and insider ownership are negatively related to the abnormal first day return, and while intuitively appealing, the correlations are not at significant levels. Largest ownership is positively related to the abnormal first day return, which is intuitively appealing but the correlation is not at a significant level.

Control variables and the abnormal yearly return

The control variables in the form of the dummy for primary, goods, and service are positively related to the abnormal first day return at the 1% significant level. Property and investment are positively related to the abnormal first day return at the 5% significant level. Size is positively related to the abnormal first day return at the 10% significant level.

9.8.2 Short-Term Final Estimations for Tobin's Q

Table 9.14 Cross-Sectional GLS Regression/OLS Regression Results for Dependent Variable Tobin's Q

	Governance Compositions				
	Size	*Demographic*	*Leadership*	*Evaluation*	*All*
	GLS	*GLS*	*GLS*	*GLS*	*GLS*
Independent and Control Variable	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*
Constant	0.755	1.358***	0.617	-0.387	-5.432
MD Gender		-0.309			-0.685
MD Experience				-0.525	-0.077
MD Salary				0.272	0.689
CEO Duality			-0.393		0.291
Chairman Experience				0.419	0.028
Number of Directors	-0.129*				-0.136*
Independent Director Percentage	0.169				0.730
Female Director Number		-0.054			0.241
Block Shareholding			0.492		0.160
Insider Shareholding			0.981		1.417
Management Shareholding					2.726***
Board Committee	-0.612				-0.752
Remuneration Committee	-0.154				-0.201
Independent Audit	2.207***				2.721***
Largest Shareholding					-1.254
D/E Ratio	-0.323**	-0.336**	-0.432***	-0.374**	-0.463***
Size	0.000	0.000	0.000	0.000	0.000
Primary	-0.228	0.217	0.307	0.5040	-0.290
Goods	0.208	0.681	0.701	0.9292	0.2007
Property	-1.511**	-0.559	-0.311	-0.3104	-1.117
Service	0.230	0.782	0.960**	1.081*	-0.038
Investment	-0.815	-0.066	0.063	0.273	-0.802
Year 2000	0.402	0.621	0.829	0.7073	1.1219
Year 2001	0.772	0.560	0.510	0.5941	1.3322
Year 2002	1.178	1.168*	1.205*	1.477*	1.624*
Year 2003	0.487	0.402	0.548	0.457	1.1794
Year 2004	0.292	0.062	0.188	0.067	0.997
R^2	0.224	0.142	0.187	0.156	0.421

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

The results presented in Table 9.14 show the relationship of corporate governance and control variables with Tobin's Q. The table includes four governance estimations, viz size, demographics, leadership, and evaluation. This last estimation shows the estimated coefficients when all governance and control variables are included in the regression. The

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presence of heteroskedasticity necessitates the use of GLS estimation for all regressions. Three governance variables are observed as significantly impacting Tobin's Q.

CEO and Tobin's Q

CEO gender and CEO experience are negatively related to Tobin's Q, and while intuitively appealing, the correlations are not at significant levels. CEO salary and CEO duality have been widely used in prior studies, but they are not significantly related to the abnormal first day return in this case.

Board and Tobin's Q

The number of directors is negatively related to Tobin's Q and is significant at the 10% level. Abdullah (2004), Bonn (2004), Bonn et al. (2004), Daily et al. (2005), Dwivedi et al. (2005), Staikouras et al. (2007), and Chang (2009) find that board size is negatively associated with firm performance in Japan, Taiwan and Europe, but positively associated with firm performance in India, and has no influence in Australia, the US and Malaysia. This study finds board size is negatively significantly related to the short-term Tobin's Q in the NZSE. This may be because a large board reflects ineffective leadership.

The independent audit is positively related to Tobin's Q and is significant at the 1% level. These findings are consistent with previous studies by Jain et al. (2005) and Reddy et al. (2008). According to Jain et al. (2005), investment in a high quality audit leads to a significantly lower post-IPO failure rate in the US. Reddy et al. (2008) indicate that an audit committee has a positive effect on firm performance in New Zealand.

Chairman's experience reflects a coefficient positively related with the Tobin's Q but not at a significant level. The number of female directors and the proportion of independent directors have been widely used in prior studies, but they are not significantly related to the Tobin's Q in this case. Board committee and remuneration committee are also not significantly related to the Tobin's Q in this case.

Ownership and Tobin's Q

Management ownership is positively related to Tobin's Q and is significant at the 1% level. This may be attributed to investors' behaviour reflecting that management shareholding is considered an important signal for a potential share price rise. This finding is consistent with several previous studies. Kroll et al. (2007), Nikbakht et al.(2007), Balatbat et al. (2004), and Roosenboom et al. (2005) suggest that managerial ownership is positively associated with IPO performance in the US, Australia and Holland. This finding is contrary to several previous studies, where Dempere (2007), Firth (1997) and Reddy et al. (2008) indicate that insider ownership has a negative effect on firms' performance in New Zealand.

Block ownership and insider ownership are positively related to Tobin's Q and while intuitively appealing, the correlation is not at a significant level. Largest ownership is negatively related to the abnormal first day return and though it is intuitively appealing, the correlation is not at significant level.

Control variables and Tobin's Q

The control variables' D/E ratio is negatively related to Tobin's Q, at the 1% significant level. Year 2002 is positively related to the Tobin's Q at the 10% significant level.

9.8.3 Short-Term Final Estimations for ROA

Table 9.15 Cross-Sectional GLS Regression/Dynamic GMM Regression Results for Dependent Variable ROA

	Governance Compositions				
	Size	*Demographic*	*Leadership*	*Evaluation*	*All*
	GLS	*OLS*	*OLS*	*OLS*	*GLS*
Independent and Control Variable	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*
Constant	-0.048	0.022	0.006	-0.520**	-0.649**
MD Gender		0.211***			0.253***
MD Experience				0.028	
MD Salary				0.083**	0.093**
CEO Duality			-0.012		-0.018
Chairman Experience				0.070	
Number of Directors	-0.015**				-0.012
Independent Director Percentage	-0.039				-0.019
Female Director Number		-0.012			-0.022
Block Shareholding			-0.037		-0.016
Insider Shareholding			0.062		0.024
Management Shareholding			0.060		0.104
Board Committee	0.170***				0.134**
Remuneration Committee	0.015				0.046
Independent Audit	0.042				-0.013
Largest Shareholding			0.056		0.084
D/E Ratio	0.014	0.033	0.027	0.026	0.007
Size	0.000***	0.000**	0.000***	0.000**	0.000***
Primary	-0.045	-0.113*	-0.129**	-0.057	0.033
Goods	-0.013	-0.076	-0.095*	-0.020	0.0657
Property	0.108*	0.000	0.012	0.052	0.229***
Service	0.071	-0.009	-0.022	0.041	0.157*
Investment	0.060	-0.030	-0.030	0.021	0.134
Year 2000	-0.036	-0.039	-0.032	0.0276	0.019
Year 2001	-0.091	-0.024	-0.024	0.0280	-0.0530
Year 2002	-0.155**	-0.048	-0.036	-0.025	-0.108
Year 2003	-0.095	-0.032	-0.011	0.016	-0.045
Year 2004	-0.113*	-0.004	0.012	0.040	-0.077
R^2	0.420	0.269	0.287	0.297	0.530

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

The results presented in Table 9.15 show the relationship of corporate governance and control variables with ROA. The table include four governance estimations, viz size, demographics, leadership, and evaluation. This last estimation shows the estimated coefficients when all

governance and control variables are included in the regression. The presence of heteroskedasticity necessitates the use of GLS estimation for size and all governance regression. Three governance variables are observed as significantly impacting ROA. The demographic, leadership and education regressions Hausman test results are not significant and suggesting the random effects model is appropriate.

CEO and ROA

CEO gender is positively related to ROA at the 10% significant level. This finding is consistent with previous studies by Adams et al. (2009) who indicate a positive relationship between female CEO and firm performance.

CEO salary is positively related to ROA at the 5% significant level. This finding is consistent with Engel et al. (2002), Lee et al. (2008) and Nikbakht et al. (2007) who find that top management salary is positively related to IPO performance in the US. Kren & Kerr (1997) and Lippert (1999) indicate a positive relationship between CEO compensation and firm performance. A plausible reason is that most high income managers are from larger companies. Those companies have relatively low risk and offer better ROAs.

CEO duality is negatively related to the ROA and while intuitively appealing the correlation is not at a significant level.

Board and ROA

The board committee is positively related to ROA and is significant at the 5% level. These findings are consistent with the previous studies by Jain et al. (2005) and Reddy et al. (2008). Number of directors, number of female directors, and the proportion of independent directors

has been widely used in prior studies, but they are not significantly related to the ROA in this case. The remuneration committee reflects a coefficient positively related with ROA but not at a significant level. The independent audit reflects a coefficient negatively related with the ROA but not at a significant level.

Ownership and ROA

Block ownership is negatively related to ROA and while intuitively appealing the correlation is not at a significant level. Management ownership, insider ownership and largest ownership are positively related to the abnormal first day return and while intuitively appealing, the correlations are not at significant levels.

Control variables and ROA

The control variables size and property are positively related to ROA at the 1% significant level. Service is positively related to the abnormal first day return at the 10% significant level.

Insignificant independent variables

There are some very important variables in prior studies but they are not significantly related to the short-term IPO performance in this NZSE study. Balatbat et al. (2004), Chahine et al. (2009), Dempere (2007), Lam et al. (2008) and Braun et al. (2007) indicate that CEO duality is significantly associated with IPO performance in Australia, Arab countries, and the US. Lam et al. (2008) and Abdullah (2004) indicate that CEO duality has no significant effect on firm performance in Hong Kong and Malaysia. This study finds it is not significantly related to the short-term IPO performance in the NZSE. This may be because in the sample dataset only 6.1% companies have CEO duality in the NZSE. So it is very hard to determine the impact of CEO duality on the short-term IPO performance.

The proportion of independent directors is also not significantly related to the short-term IPO performance in the New Zealand market. The proportion of independent directors is an important variable in prior financial performance studies. Abdullah (2004), Balatbat et al.(2004), Bonn (2004), Bonn et al. (2004), Roosenboom et al. (2005) and Reddy et al. (2008) suggest outside directors are positively related to firm value in Holland, Australia and New Zealand, but have no influence in Japan and Malaysia. A plausible reason is that most directors are independent directors, and it is hard to compare the performance of independent and executive directors.

The number of female directors is not significantly related to the short-term IPO performance in this study. Bonn (2004), Bonn et al. (2004), Campbell et al. (2008), and Reddy et al. (2008) find that female directors are positively associated with firm performance in Spain, US, New Zealand and Australia, but have no influence in Japan. A plausible reason is that there are very few female directors in the NZSE (0.3415 in average), which makes it hard to find the relationship between female directors and the short-term IPO performance from such small sample.

Insider ownership and block ownership are important variables in prior IPO and financial performance studies, but they are not significantly related to the short-term IPO performance in the NZSE. Chahine (2007) finds that block ownership is negatively associated with firm performance in the short-term in France. Reddy et al. (2008) indicate that block ownership has a positive effect on firm performance in New Zealand. This may be attributable to investors' behaviour reflecting they are not concerned about insider and block ownership.

9.9 Short –Term Specification Tests Results

Joint significance test

The study employs the Wald Test to examine the significance for independent and control variables of each OLS and GLS estimation. The results indicate that all p-values are significant at the 1% level, so all independent and control variables can be included in those estimations.

9.10 Conclusion

This chapter has analysed and explored the results of the corporate governance variables and the long- and short-term IPO performance relationships in the New Zealand Stock Exchange dataset. The distribution of each variable has been checked to ensure it is approximately normal by median, standard deviation, skewness, and kurtosis. The study provides the descriptive statistics of variables after fixing missing values and outliers, and dropping several independent variables. Diagnostic testing indicates the presence of heteroskedasticity and endogeneity in some of the regressions and a GLS or a dynamic GMM estimation is used.

In the long-term case, this study finds CEO gender is negatively related to the abnormal yearly return and ROA. The number of female directors is positively related to the abnormal yearly return. The number of directors is negatively related to Tobin's Q. The board committee is positively related to the abnormal yearly return. The remuneration committee is positively related to the Tobin's Q and ROA. The independent audit is positively related to the ROA. Insider ownership is positively related to the long-term Tobin's Q. The largest shareholding is negatively related to the long-term Tobin's Q. This study applies a serial correlation test, over-identification test, and joint significance test for all long-term IPO performance regressions and the results show all models are statistically robust. According to

the above results this study indicates that CEO gender, number of female directors, committees, insider ownership, and largest shareholdings are corporate governance practices linked to long-term IPO performance in New Zealand. This leads to non-rejection of H7, H11, H13, H15, H19, H24, H25 and H26.

In the short-term case, this study finds CEO gender is negatively related to the abnormal first day return but positively related to ROA. CEO salary is positively related to the abnormal first day return and ROA. The number of directors is negatively related to the Tobin's Q. The board committee is positively related to ROA. The independent audit is positively related to Tobin's Q. Management ownership is positively related to Tobin's Q. This study applies the joint significance test for all short-term IPO performance regressions and the results show the significance of corporate governance variables in all models. According to the above results this study indicates that CEO gender, CEO salary, committees, insider ownership, and number of directors are good corporate governance practices for short-term IPO performance in New Zealand. This leads to non-rejection of H7, H8, H11, H15, H24 and H26.

Overall, the panel data regressions explain the long-term IPO performance well, but the cross sectional regressions do not have reasonable explanation on the short-term IPO performance. In the short-term case, first day return, Tobin's Q and ROA have been investigated by the models, but just two independent variables are significantly related to abnormal first day return, and three variables are significantly related to Tobin's Q and ROA. This may be due to a lack of available information. In other words, investors may not have many or any opportunities to learn about corporate governance mechanisms before an IPO listing.

CHAPTER 10 COMPARISON OF CORPORATE GOVERNANCE IMPACTS ON IPO PERFORMANCE IN CHINESE AND NEW ZEALAND STOCK EXCHANGES

10.1 Introduction

Previous chapters described statistical tests and the results describing the relationship between corporate governance mechanisms and performance of IPOs on the SHSE, SZSE and NZSE. This chapter presents a comparison of the three individual analyses of corporate governance and short- and long-term IPO performance. Section 2 provides a discussion of the corporate governance on long-term IPO performance through the three stock exchanges. Section 3 provides a discussion of the corporate governance on short-term IPO performance through the three stock exchanges. Section 4 concludes the chapter.

10.2 Comparison of SHSE, SZSE, and NZSE's corporate governance on long-term IPO performance

Table 10.1 produces the relationship between corporate governance and long-term IPO performance (abnormal yearly return, Tobin's Q and ROA) across the SHSE, SZSE, and NZSE.

Table 10.1 Comparison of SHSE, SZSE, and NZSE's Long-Term Regression Results Summary

Variable	Abnormal Yearly Return			Tobin's Q			ROA		
	SHSE	SZSE	NZSE	SHSE	SZSE	NZSE	SHSE	SZSE	NZSE
MD Age				+					
MD Gender			-						-
MD Qualification									
MD Experience									+
Top Three Officer Pay/MD Salary					+		+		
CEO Duality									
Chairman Experience	+								
Chairman Qualification					+		+		
Number of Directors				-		-			
Independent Director Percentage	-	-		-	-				
Female Director Number			-					+	
Number of Supervisors				+			+	+	
Board Meeting per Year	-			-	-				
Supervisors Meeting per Year				+	+				
Block Shareholding									
Insider Shareholding						+			
Management Shareholding									
SOE Shareholding		-							
Legal Person Shareholding		-							
Non-trading Shareholding									
Board Committees			+						
Remuneration Committees						+			+
Independent Audit			+						+
Number of Committees									
Largest Shareholding		+				-	+	+	

Note: + and -, indicate that a positive or negative significant relationship respectively.

CEO factors and long-term IPO performance

Results indicate CEO age has no impact on the long-term IPO performance in SZSE, but has a positive impact on the Tobin's Q in SHSE. CEO age is important for China given a continuing general reverence given to older people who are viewed as having acquired more wisdom. The older CEOs are likely to have more experience in the industry. However, most SZSE listed firms are relatively small and high risk, high technology firms and CEO age may not be considered an important factor by investors. CEO age is not available for NZSE data.

CEO gender has a negative impact for the long-term Tobin's Q and ROA on the NZSE, but has no impact on the SHSE and SZSE. There are two reasons. First, this may be attributable to investors' behaviour reflecting that female CEOs are not considered an important signal for the positive performance. Second, according to the descriptive statistics, only 2% of CEOs are female in the dataset for New Zealand and China. It is very hard to detect the relationship between female CEOs and long-term IPO performance from such a small sample.

Results indicate CEO qualification has no impact on the long-term IPO performance in SHSE, SZSE, and NZSE. This may be because of the missing data. Only 2234 out of 2966 original observations are available on the SHSE, 862 out of 1139 are available on the SZSE, and 233 out of 494 are available on the NZSE.

CEO experience has no impact on the long-term IPO performance on the SHSE and SZSE, but has a positive impact on the long-term ROA on the NZSE. In the Chinese samples, many of the listed firms are SOEs, where the tenure of the CEO is often less than five years before they move on to another company. It is hard to find the relationship between CEO experience and IPO performance. This may be because experienced CEOs have more knowledge of firms than those less experienced CEOs in the NZSE.

Top management salary has positive impacts on the ROA on the SHSE, and on the long-term Tobin's Q of the SZSE. This may be a reflection of Chinese government policy. Most high income managers are from larger companies and those companies in the SZSE have relatively low risk and are more attractive to investors. Investor behaviour may impact the share price and raise the level of Tobin's Q. SHSE, when compared to SZSE, has large amounts of state owned enterprises listing IPOs and unlike private companies, the top

managers of larger SOE companies do not necessarily have high salaries. The larger companies also have relatively low risk and are more attractive to the investors and the firm performance is affected by the influence of high income CEOs.

Results indicate CEO duality has no impact on the long-term IPO performance on all three exchanges. For SHSE and SZSE this may be attributable to the specific role of Chinese chairmen. Many Chinese chairmen come from a legal person background or they are the largest shareholders of the companies; their roles are not only monitoring the firm, they also act as managers in the company. Therefore, CEO duality becomes unimportant. However, the result might also be because of the sample dataset; less than 6% companies have CEO duality in those markets. So it is very hard to ascertain the impact of CEO duality on long-term IPO performance.

Board factors and long-term IPO performance

Results indicate that chairman experience has a positive impact on the long-term abnormal yearly return on the SHSE, but no impact on the others. This may be attributable to investors' behaviour reflecting an understanding that more experienced chairmen have more knowledge in the current industry and will make a consistent contribution to the company on the SHSE. But as with CEO experience, the tenure of the chairman is a limitation of the study. It is hard to find the relationship between chairman experience and IPO performance on the SZSE and NZSE.

Chairman qualification has a positive impact on ROA on the SHSE, and a positive impact on the long-term Tobin's Q of the SZSE. The chairman's qualification is an important signal for Chinese investors who have a continuing general reverence for higher educated people who

are viewed as having acquired more wisdom. These higher educated chairmen are seen as more likely to help the company achieve better long-term firm performance. The factor is deleted in the New Zealand study as there are too many missing values.

Number of directors has no impact on the SZSE, but has negative impacts on the Tobin's Q of the SHSE and NZSE. A large board decreases effective communication and co-ordination between shareholders. Another possible reason is that investors may be concerned that the directors lack a professional background. Actually, many Chinese independent directors of state owned firms are government officials, academics, and some are foreigners so perhaps they do not have a reasonable understanding of a company's current situation.

The proportion of independent directors has a negative impact on the long-term abnormal yearly return and Tobin's Q on the Chinese exchanges. This may be attributable to investors' behaviour reflecting a concern that independent directors lack a professional background and will not make a consistent contribution to the company. Actually, as already mentioned, many Chinese independent directors are government officials, academics, and foreigners who may not have a reasonable understanding of the company's current situation. Each listed company only needs to include two independent directors on their board before year 2002. The small number of independent directors means they can be marginalized and find it hard to influence board decision-making.

The number of female directors has a negative impact for the abnormal yearly return on the NZSE, and a positive impact for ROA on the SZSE. Prior studies suggest that the existence of female directors will bring different ideas to the board and therefore contribute to performance. Similarly, with the CEO gender issue, there are very few female directors in the

SHSE, making it hard to find the relationship between female directors and long-term IPO performance from such a small sample. Also different countries have different board selection criteria, law and institutional structures. These factors may impact on contradictory results.

Board meeting per year has a negative impact for the long-term Tobin's Q on the SHSE and SZSE, and has a negative impact for the long-term abnormal yearly return on the SHSE. The high frequency of board meetings may be because board efficiency is low. It may also indicate that company has a lot of issues. The factor is unavailable for the NZSE study.

Results indicate number of supervisors and supervisor meetings per year have positive impacts for long-term performance on the SHSE and SZSE. Supervisors are responsible for overseeing the financial condition of the company, monitoring the implementation of decisions made by top management and board of directors, and implementing other supervisory duties prescribed by the company constitution. More supervisors are likely to help the company to achieve a better performance and reduce agency cost. Investors may believe that more supervisors and a more active supervisory group will help the company to achieve a better performance, protect shareholders' benefits, and reduce agency costs.

Board committees and independent audit have positive impacts for the long-term IPO performance on the NZSE. Those factors are unavailable for the Chinese exchanges. Number of committees has no impact on the SHSE and SZSE.

Ownership factors and long-term IPO performance

Block ownership has no impact on the long-term IPO performance on the NZSE. This may be because of the sample dataset where only 4.66% companies have no block shareholders on the NZSE. So it is very hard to ascertain the impact of block ownership on the long-term performance. This factor is unavailable for the Chinese cases, as block ownership exists in every Chinese listed firm.

Insider shareholding has positive impacts on Tobin's Q on the NZSE, but no impact on the Chinese exchanges. This may be attributable to investors' behaviour reflecting that insider shareholding is considered an important signal for potential share price rise in New Zealand. But the inside trading advantage is a common issue in China, so the Chinese investors may not consider it an important signal.

The SOE and legal person ownership have negative impacts on the abnormal yearly return on the SZSE, and no impact on the SHSE. Most SHSE listing IPOs are SOEs. The largest ownership has a positive impact on the abnormal yearly return and ROA on the SZSE, and a positive impact on ROA on the SHSE. First, investors may believe that the large amount of the share ownership is an important signal which shows that s large block holder has high expectations for the company, encouraging others to acquire shares. Second, a large amount of founder ownership indicates that the company has the potential to raise capital from the debt market as well as from the stock market. Third, a rise in stock price may be the results of demand and purchase factions of large shareholders. Largest ownership has a negative impact on Tobin's Q on the NZSE. A possible reason is that large share ownership is seen as a potential cause for agency problems.

Overall, corporate governance factors play a significant role on the SHSE, SZSE, and NZSE's IPO performance.

10.3 Comparison of SHSE, SZSE, and NZSE's corporate governance on short-term IPO performance

Table 10.2 shows the relationship between corporate governance and short-term IPO performance (abnormal first day return, Tobin's Q and ROA) across the SHSE, SZSE, and NZSE.

Table 10.2 Comparison of SHSE, SZSE, and NZSE's Short-Term Regression Results Summary

Variable	First Day Return			Tobin's Q			ROA		
	SHSE	SZSE	NZSE	SHSE	SZSE	NZSE	SHSE	SZSE	NZSE
MD Age									
MD Gender			-	-					+
MD Qualification									
MD Experience									
Top Three Officer Pay/MD Salary			+	+			+		+
CEO Duality				-					
Chairman Experience									
Chairman Qualification									
Number of Directors		+			+	-			
Independent Director Percentage							-		
Female Director Number									
Number of Supervisors							-		
Board Meeting per Year				-					
Supervisors Meeting per Year									
Block Shareholding									
Insider Shareholding				+		+			
Management Shareholding									
SOE Shareholding					+				
Legal Person Shareholding	-				+				
Non-trading Shareholding				+			+		
Board Committees									+
Remuneration Committees									
Independent Audit						+			
Number of Committees									
Largest Shareholding				+			+		

Note: + and -, indicate that a positive or negative significant relationship respectively.

CEO factors and long-term IPO performance

Results indicate CEO age has no impacts on the short-term IPO performance in the SHSE and SZSE. The reason is that the short-term performance of the Chinese IPOs is extremely active[15], so CEO age is no longer considered as an indicator of wisdom. The CEO age factor is not available for NZSE data.

CEO gender has negative impact on the short-term Tobin's Q on the SZSE, a negative impact for the short-term first day return on the NZSE, but has a positive impact for the short-term ROA on the NZSE. There are two reasons. First, this may be attributable to investors' behaviour reflecting that female CEOs are not considered as an important signal for positive performance. Second, according to the data descriptive statistics, only 2% CEOs are female in the dataset. It is very hard to find the relationship between female CEOs and long-term IPO performance from such a small sample.

Results indicate CEO qualification and experience have no impacts on the short-term IPO performance in SHSE, SZSE and NZSE. First, this may be because of the missing data. For the qualification factor, only 291 out of 409 original observations are available on the SHSE, 85 out of 142 are available on the SZSE. Second, in the Chinese samples, many of the listed firms are state owned and the terms of office are normally less than five years, after which CEOs may move to other companies. It is hard to find the relationship between CEO experience and IPO performance. CEO qualification and experience are deleted from the NZSE dataset because of too many missing values.

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[15] On average, the abnormal first day return is 100.09% for SHSE, and 103.86% for SZSE.

Top management salary has a positive impact on the short-term ROA on the SHSE and NZSE, a positive impact on the first day return on the NZSE, and a positive impact on the short-term Tobin's Q on the SHSE. This may be reflecting Chinese government policy. Most high income managers are from larger companies and those companies on the SZSE have relatively low risk and are more attractive to investors. Investor behaviour may impact the share price and raise the level of Tobin's Q. SHSE, when compared to SZSE, has large amounts of SOE listing IPOs and unlike private companies, the top managers of larger SOE companies do not necessarily have high salaries. The larger companies have relatively low risk and are more attractive to the investors. But the firm performance is affected by the influence of high-income CEOs.

Results indicate CEO duality has a negative impact on the short-term Tobin's Q on the SHSE. This may be because of the specific role of Chinese chairmen. Many Chinese chairmen come from a legal background or they are the company's largest; their role is not just to monitor the firm, they often manage the company too.

Board factors and long-term IPO performance

Results indicate chairman experience and qualification have no impact on the short-term IPO performance in all three markets. It is the same with CEO experience and qualification factors, with missing data the potential reason for insignificance. The term of office is a limitation of this study. It is hard to find the relationship between chairman experience and IPO performance in all three markets.

Chairman qualification has positive impact on ROA on the SHSE, and has a positive impact on the long-term Tobin's Q on the SZSE. The chairman's qualification is an important signal

for Chinese investors who have a continuing general reverence for higher educated people who are viewed as having acquired more wisdom. And these higher educated chairmen are more likely to help the company achieve a better long-term performance. The factor is deleted from the NZSE study as many miss values.

Number of directors has no impact on the SHSE, but has a positive impact on the first day return and Tobin's Q of the SZSE. It has a negative impact on the Tobin's Q of the NZSE. This finding is offset with the long-term case. A possible reason is that investors may believe the large board is effective in the very first stage, but after years they may find that a large board decreases effective communication and co-ordination between shareholders. Another possible reason is that investors may be concerned that the directors lack a professional background.

The proportion of independent directors has a negative impact for the short-term ROA on the SHSE. Actually, most listed IPOs are state-owned in the SHSE, and many independent directors are government officials, so perhaps they do not have a reasonable understanding of the company's current situation and cannot bring the professional knowledge to help the firm grow. Also each listed company only needs to include two independent directors on their board before year 2002. The small number of independent directors means they can become marginalized and find it hard to influence board decision-making.

The number of female directors has no impact on all markets. Similarly with CEO gender. There are very few female directors in all markets, making it hard to find the relationship between female directors and long-term IPO performance from such a small sample.

Board meeting per year has a negative impact for the short-term Tobin's Q on the SHSE. The high frequency of board meetings may be because of board efficiency is low. It may be also indicate that company has a lot of issues. The factor is unavailable for NZSE study.

Results indicate number of supervisors has a negative impact for the short-term ROA on the SHSE. Supervisors' meeting per year has no impact on the SHSE. The investors may believe that more supervisors and a more active supervisory group will help the company to achieve a better performance, protect shareholders' benefits and reduce agency costs. But the supervisor team is not helpful for short-term firm performance.

Board committees and independent audit have positive impacts for the long-term IPO performance on the NZSE. Those factors are unavailable for the Chinese exchange studies. Number of committees has no impact on the SHSE and SZSE.

Ownership factors and long-term IPO performance

Block ownership has no impact on the long-term IPO performance on the NZSE. This may be because of the sample dataset where only 4.66% companies have no block shareholders in the NZSE. So it is very hard to ascertain the impact of block ownership on long-term performance. This factor is unavailable for the Chinese cases, as block ownership exists in every Chinese listed firm.

Insider shareholding has a positive impact on Tobin's Q on the SHSE and NZSE. In New Zealand, this may be attributable to investors' behaviour reflecting that insider shareholding is considered an important signal for a potential share price rise.

SOE and legal person ownership have positive impacts on Tobin's Q on the SZSE. Legal person ownership has a negative impact on the first day return on the SHSE. Most SHSE listing of IPOs are state owned enterprises, but the SZSE has relatively fewer SOE IPOs. SOE ownership may be considered as a signal of information from government officials and also contribute to the attractiveness for investors.

Largest ownership has a positive impact on Tobin's Q and ROA on the SHSE. On the SHSE, the state is usually the largest shareholder, so investors may believe that the large amount of the share ownership is an important signal that shows that large block holder has a high expectation for the company, which encourages others to acquire shares. The largest ownership has no impact on the SZSE and NZSE. A plausible reason is that large share ownership is deemed a potential risk for agency problems.

Overall, corporate governance factors play a significant role on the SHSE, SZSE and NZSE's short-term Tobin's Q and ROA, but corporate governance has almost no effect on the abnormal first day return in all markets.

10.4 Conclusion

This chapter explores the results of the corporate governance variables and the long- and short-term IPO performance relationships in all three exchanges, and compares the three exchanges. This chapter shows how governance factors play a significant role on the long-term IPO performance in all three exchanges, even when the different variables have different impacts across the different markets. The study finds that board and ownership variables are more significant and important than the CEO variables on the long-term IPO performance in all markets.

Second, this chapter also reports the governance factors play a significant role on the short-term Tobin's Q and ROA in all three different markets, but have no effect on the abnormal first day return in all cases. This may be because of disclosing. For most of investors it is extremely hard to receive the governance information on the first day of trade, unless they are inside traders. Specifically, the study finds that board and ownership variables are more significant and important than the CEO variables on the short-term IPO performance in all markets.

The last chapter provides the summary and conclusion of the thesis and includes the contribution and limitations of the study.

CHAPTER 11 SUMMARY AND CONCLUSION

11.1 Introduction

This chapter provides a summary of the process followed in this study and the findings. The significant contribution of this work is discussed and limitations of the work are noted. The remainder of the chapter is divided into the following sections. Section 11.2 provides a review of the study process. Section 11.3 notes the key findings. Section 11.4 presents the contribution of the study to the literature. Section 11.5 considers the implications of the study. Section 11.6 notes the limitation of the study. Section 11.7 comments on potential future research. Section 11.8 presents the conclusion of the chapter.

11.2 Summary of the Study Progress

Corporate governance mechanisms and IPO performance have been widely studied by researchers. The previous literature suggests that corporate governance mechanisms have an impact on IPO performance in developed and developing countries at different levels. However, most studies have focused on large and developed economies. China is continually evolving and the rapid pace of development may give rise to new attributes or features of IPO leading to success. In New Zealand there had been little attention given to these studies and little change to board characteristics.

China is now the second largest economy in the world. Researchers have investigated many issues relating to the Chinese stock exchange, but the material relating to corporate governance and IPOs is relatively small. The New Zealand economy is increasingly becoming more integrated with Asian economies, but culture, lifestyle, politics and legal systems are very different in East and North Asian countries. The tests of how corporate

governance impacts on IPOs' returns in culturally different countries will enable a valuable comparison.

New Zealand and China are very different countries, reflected in their size, population, legal, and political systems, but there are still some interesting similarities for their stock markets. The modern stock trading actions were started in 1860s for both countries and were subject to European influences. The developments of their stock markets were interrupted by the Second World War. The New Zealand exchanges finally emerged as one national exchange in 1989. The new Chinese stock exchanges were established in 1990, almost at the same time. Neither the New Zealand nor Chinese stock markets have proved attractive to foreign IPOs.

This research examined the impact of corporate governance practices in China and New Zealand on the short- and longer-term sustainable returns of IPOs. The focus of the investigation was not on premium paid on listing, but rather the sustained returns post-listing.

The study used data from Shanghai, Shenzhen and New Zealand stock exchanges, covering the IPOs listed from 1999 to 2004. The data is secondary data collected from the websites of the three stock exchanges, NZX Deep Archive, CSMAR database and individual companies' annual reports. However, from the New Zealand case, 23 companies did not provide most of the corporate governance data. There were 82 remaining IPOs in New Zealand, 409 IPOs in SHSE, and 142 IPOs in SZSE. In Shanghai, 409 IPOs have been post-listed from 1999 to 2004. There are 2966 observations regarding long-term IPO performance, and 409 observations regarding short-term IPO performance in the SHSE. There are 1139 observations to test the long-term IPO performance, and 142 observations to test the short-

term IPO performance in the SZSE. There are 494 observations to test long-term IPO performance, and 82 observations to test short-term IPO performance in the NZSE.

The study included an extensive range of governance variables, including board size (number of directors, percentage of independent directors, number of supervisors and committees), board demographics (CEO age, CEO gender and number of female directors), board leadership (CEO duality and ownerships), board education (CEO and chairman qualification), and board evaluation variables (CEO and chairman experience, top manager salary, board meetings per year and supervisors meetings per year). There are three long-term sustainable dependent variables, viz yearly abnormal return, long-term Tobin's Q, and long-term ROA. There are also three short-term dependent variables, viz first day abnormal return, short-term Tobin's Q and short term ROA. There are a group of control variables between independent and dependent variables, viz size, beta, labour, market factors, industries, and years of listings.

The study describes the research methods, which include the initial research questions, hypotheses, models, potential independent and control variables, statistical tests, and suitable regressions formulation. The study also presents the descriptive statistics, econometric tests and the empirical results and findings about the relationship between corporate governance mechanisms and the short- and long-term performance of IPOs on the SHSE, SZSE and NZSE. Several diagnostic tests including serial correlation test, over-identification test, and joint significance test are also used to check the validity of the regressions.

11.3 Summary of the Study Findings

There are many significant independent variables in the SHSE study. In the long-term case, this study finds that the chairman's experience is positively related to the abnormal yearly return. The proportion of independent directors and the number of board meetings per year

are negatively related to the abnormal yearly return. The CEO age is positively related to the Tobin's Q. The number of directors, the number of board meetings and the proportion of independent directors are negatively related to the Tobin's Q. The number of supervisors and the supervisors meeting per year are positively related to the Tobin's Q. The top management salary, the chairman's qualification and the number of supervisors are positively related to the ROA. The percentage of largest shareholding ownership is positively related to the abnormal yearly return. In the short-term case, this study finds that the legal person shareholding is negatively related to the Tobin's Q. Top management salary is positively related to the short-term Tobin's Q. CEO duality and the number of board meetings a year are negatively related to Tobin's Q. Insider ownership and the non-trading ownership are positively related to the Tobin's Q. The top management salary is positively related to the long-term ROA. The proportion of independent directors and number of supervisors are negatively related to the short-term ROA. The non-trading and the largest ownership are positively related to ROA. Overall, the panel data and cross sectional regressions explain the long and short-term IPO performance well.

There are also many significant independent variables in the SZSE study. In the long-term case, this study finds that the percentage of independent directors, state ownership and legal person ownership are negatively related to the abnormal yearly return. The percentage of largest shareholding ownership is positively related to the abnormal yearly return. The top management salary is positively related to the long-term Tobin's Q and the chairman's qualification is positively related to the long-term Tobin's Q. The proportion of independent directors and the number of board meetings per year are negatively related to the long-term Tobin's Q. Supervisors meetings per year is positively related to the long-term Tobin's Q. The number of female directors and the number of supervisors are positively related to the

long-term ROA. . The percentage of largest shareholding ownership is positively related to the ROA. In the short-term case, this study finds that the number of directors is positively related to the abnormal first day return. CEO gender is negatively related to the Tobin's Q while the number of directors is positively related to the Tobin's Q. State ownership and legal person ownership are positively related to the Tobin's Q. Overall, the panel data regressions explain the long-term IPO performance well, but the cross sectional regressions do not have reasonable explanation for the short-term IPO performance.

There are some significant independent variables in the NZSE study. In the long-term case, this study finds CEO gender is negatively related to the abnormal yearly return and ROA. The number of female directors is positively related to the abnormal yearly return. The number of directors is negatively related to the Tobin's Q. Board committee is positively related to the abnormal yearly return. The remuneration committee is positively related to the Tobin's Q and ROA. The independent audit is positively related to the ROA. Insider ownership is positively related to the long-term Tobin's Q. The largest shareholding is negatively related to the long-term Tobin's Q. In the short-term case, this study finds CEO gender is negatively related to the abnormal first day return but positively related to the ROA. CEO salary is positively related to the abnormal first day return and ROA. The number of directors is negatively related to the Tobin's Q. The board committee is positively related to the ROA. The independent audit is positively related to the Tobin's Q. Management ownership is positively related to the Tobin's Q. Overall, the panel data regressions explain the long-term IPO performance well, but the cross sectional regressions do not have reasonable explanation for the short-term IPO performance.

11.4 Contribution of the Study to the Literature

This research examined the impact of corporate governance practices in China and New Zealand on the short- and longer-term sustainable returns of IPOs. This thesis makes several a ranges of contributions to knowledge about the IPO performance and corporate governance. Through the use of a wide range of governance variables, the analysis is broader than prior work and provides greater confidence in the findings. As the first study looking at both short-term and long-term IPO performance associated with corporate governance structures the thesis highlights the intertemporal change in emphasis.

Prior studies predominantly test either short-term or long-term IPO performance over a specific period. This study extends an understanding of the sustainable relationship between the IPO performance and corporate governance. The current study tests the yearly sustainable long-term IPO performance for periods of up to 11 years. In the short-term corporate governance relating to high salary management teams, a large percentage of ownership for insiders, SOEs, legal person(s), and non-trading ownership are important but this is not seen to be so in the longer-term for Chinese IPOs. Similarly in the long-term corporate governance emphasises CEO age, chairperson experience and qualification, supervisory board activity, and more female directors which do not appear to be associated with short-term performance in China. In the short-term corporate governance relating to high salary CEO and large percentage of management ownership are important but not seen to be so in the longer-term in New Zealand. Similarly, in the long-term corporate governance emphasises insider ownership which does not appear to be associated with short-term performance in New Zealand. [16]

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[16] Findings refers to section 7.6, 7.8, 8.6, 8.8, 9.6, and 9.8.

Most previous studies have focused on large and developed economies, such as the United States, United Kingdom, other European nations, Australia and Japan. This study provides evidence from China, which is the world's fastest growing economy and which has developing stock markets. The study also introduces many specific independent variables, viz supervisor-related variables, which do not appear in the US or UK, but are important in the Chinese cases. The study also introduces the Chinese Company Act, and discovers the factors important for the development of firm management. The study also included New Zealand, which is a small developed economy.

Most of the empirical literature relating to IPOs tests the impact of corporate governance on IPO and firm performance in one market, but this study offers a comparison between two Chinese stock markets, and a comparison between two countries. The study introduces many specific control variables.

The merits of the Chinese supervisory board system are reflected in differing views in prior studies. This thesis concludes that supervisory boards are significant positively related to the long-term IPO performance in SHSE and SZSE.

Finally, this study uses a more robust empirical analysis, extending the commonly used OLS approach, with careful diagnostic testing and then applying a more appropriate model as appropriate. Some previous studies use the 2SLS technique, and not many studies use diagnostic tests. The study introduces GLS and GMM dynamic panel and GLS cross sectional technique with various diagnostic tests. Overall, the study makes many contributions to the literature.

11.5 Implications of the Study

The findings of the study point to several practical implications. A summary is presented in Table 11.1 showing the major implications and evidence across the countries and exchanges. These are expanded in the following discussion.

Table 11.1 Implications Summary

Issue/Area	Implication	Evidence
Exchanges in China Shenzhen specialises in small and medium, Shanghai covers full range of companies	Exchanges need to be aware of attributes associated with short- and long-term success to advise potential IPOs of most likely successful governance structure.	Refers to section 7.6 and section 7.8. Refers to section 8.6 and section 8.8.
Companies in China	The companies need to be aware of the most appropriate governance structure. IPO should select the exchange that will most likely to lead to successful listing.	Refers to section 7.6 and section 7.8. Refers to section 8.6 and section 8.8.
Investors in China	Investors need to check the governance attributes of IPO and consider consequences for short- and long-term returns.	Refers to section 7.6 and section 7.8. Refers to section 8.6 and section 8.8.
Policies in China	Enhancement of supervisory board role. Encouragement of more female directors.	Refers to section 7.6 and 8.6.
Exchange in New Zealand	Exchanges need to be aware of attributes associated with short- and long-term success to advise potential IPOs of most likely successful governance structure. Promotion to offshore investors information about the best practice governance in NZ.	Refers to section 9.6 and 9.8.
Companies in New Zealand	Companies need to be aware of the most appropriate governance structure.	Refers to section 9.6 and 9.8.
Investors in New Zealand	Investors need to check the governance attributes of IPO and consider consequences for short- and long-term returns.	Refers to section 9.6 and 9.8.
Policies in New Zealand	Increase the number of female directors.	Refers to section 9.6 and 9.8.
Trade between two countries	China is New Zealand's second largest trading partner. More joint venture firms can be encouraged. Build awareness of respective governance mechanisms that work best.	Refers to section 1 and 11.
Immigration from China	Encourage high net worth immigrants to invest beyond property sector, participating in equity markets. Knowledge of corporate governance may promote wise IPO investment.	Refers to section 1 and 11.

There are two stock exchanges in China, namely the Shanghai Stock Exchange and Shenzhen Stock Exchange. Compared with the New Zealand Stock Exchange, generally Chinese stock exchanges offer relatively higher levels of short-term IPO return and more unpredictable long-term returns. Chinese IPOs have greater risk in respect of long-term outcomes. Chinese exchanges need to be aware of attributes associated with short- and long-term success to advise potential IPOs of the most likely successful governance structure. More practically, the study finds that firms with an experienced chairperson, fewer independent directors, and dominant shareholders perform well on the SHSE from a long-term stock perspective. Firms with fewer independent directors, less SOE and legal person ownership, and dominant shareholders are more likely to be successful on the SZSE from a long-term stock perspective. From a short-term stock return perspective, firms with more directors are more likely to perform well on the SZSE.

Many Chinese listed companies are SOE companies, but family and privately based companies are also present on the Shenzhen Stock Exchange. Compared with NZSE listed companies, the Chinese listed companies have relatively more staff, and all the listed companies are domestic Chinese companies. When planning on listing, companies should select the exchange that will most likely lead to a successful listing. Grooming the governance structures to fit with those that have previously succeeded makes sense. According to findings, the companies with a senior CEO, a well-qualified and experienced chairperson, large and active supervisory board, and dominant shareholders, are likely to be successful in terms of long-term performance on the SHSE. Companies with high salary management teams, a large percentage of insider and non-trading ownership, and dominant shareholders, are likely to be successful in terms of short-term stock and firm performance on the SHSE. For the SZSE it appears that companies with high salary management teams, a

well-qualified chairperson, large and active supervisory board, more female directors, and dominant shareholders, are likely to be more successful in longer-term stock and firm performance. The companies with a large board, and a large percentage of SOE and legal person ownership are likely to achieve higher stock and firm performance in the short-term on the SZSE.

Chinese investors prefer to invest in well-known companies and low risk industries. Investors need to check the governance attributes of the IPO, and also consider consequences for short- and long-term returns. This study finds that firms with an experienced chairperson, fewer independent directors, and dominant shareholders offer higher stock returns in the long-term on the SHSE. Firms with fewer independent directors, less SOE and legal person ownership, and dominant shareholders offered higher stock returns in the long-term stock perspective on the SZSE. Firms with more directors offer better stock returns in the short-term case on the SZSE.

In China, the two exchanges are under the regulation of CSRC. Government policies affect the stock markets directly. However, the study shows some corporate governance mechanisms have a significant impact on the stock returns and firm performance. Therefore, the Government could offer the advances to the exchanges, companies, and also investors. The efficiency of Chinese supervisory boards was debated in prior studies. This study indicates a more active supervisory board is very important for IPO performance on both the SHSE and SZSE. Enhancement of supervisory board role will be necessary. This study also finds that only 2% of CEOs are female and, on average, there is less than one female director on the board. But the study finds female directors play an important role in the long-term case

for the SZSE. There are many well qualified, knowledgeable, and hardworking women available in the industries. Encouragement of more female directors is also recommended.

There is one national exchange in New Zealand, namely the New Zealand Stock Exchange. Compared with the Chinese stock exchanges, the NZSE offer relatively lower levels of short-term IPO return and more predictable long-term returns. New Zealand IPOs have lower risk in respect of long-term outcomes. The NZSE needs to be aware of attributes associated with short- and long-term success to advise potential IPOs of the most likely successful governance structure. This study finds that firms with a male CEO, more female directors, and committees perform well on the NZSE from a long-term stock perspective. In the short-term stock return perspective, firms with a male and high salary CEO are more likely to perform well on the NZSE. The exchange also needs to provide information about best practice governance to offshore investors. The Chinese exchanges offer the highest short-term IPO returns in the world, but the long-term performance is unpredictable. The NZSE offers a more predictable long-term return. The study suggests that the NZSE is a well-diversified option for Chinese investors to hedge their risk, and the Chinese stock exchanges are more active options to New Zealand investors.

The majority of New Zealand listed companies are private companies. Compared with Chinese listed companies, the New Zealand listed companies have relatively fewer staff, and very few overseas listings. This study finds that firms with a male CEO, more female directors, small board, committees, and a large percentage of insider ownership are likely to be successful in terms of long-term performance on the NZSE. From the short-term stock return perspective, firms with a male and high salary CEO, small board, committees, and

large percentage of management ownership, are likely to be successful in the terms of short-term stock and firm performance on the NZSE.

New Zealand investors prefer to invest in long-term stable return companies that offer high dividends. Investors need to check the governance attributes of the IPO, and also consider consequences for short- and long-term returns. This study finds that firms with a male CEO, more female directors, and committees offer higher stock returns in the long-term in the NZSE. Firms with male and high salary CEOs offer higher stock returns in the short-term on the NZSE. Investors need to check and select the stocks with the governance attributes that lead to the short- and long-term IPO higher returns. Further, the study indicates the complementary relationship between New Zealand and Chinese stock exchanges. If the investor is looking for long-term growth, the NZSE is a better option than the two Chinese stock markets. If the investor is looking for a short-term gain, Chinese stock markets are more suitable than NZSE.

The study shows some corporate governance mechanisms have a significant impact on stock returns and firm performance. Therefore, Government by being cognisant of the relationships can formulate policy frameworks which will stimulate investment and growth. Rather than establishing a company law like China, a kind of recommendation may need to be made by a softer, persuasive approach to influencing matters such as increase the number of female directors may be appropriate. This study finds that fewer than 3% of CEOs are female and there is less than one female director in the board on average. But the study finds female directors play an important role in the long-term case for the NZSE.

A Free Trading Agreement between New Zealand and China was established on 1st October, 2008 and since then China has become New Zealand's second largest trading partner. Trade between the two countries has risen quickly in recent years. In the first three quarters of 2011, two-way merchandise trade amounted to $12.7 billion.[17] Recently, many Chinese companies have invested in New Zealand, especially in the agriculture and property industries. And many New Zealand companies have built their businesses in China; the majority trading in dairy and wine products. However, a far more closely capitalised partnership between the two countries is expected in the near future. Therefore, joint venture firms will be encouraged and those companies may need to be listed on New Zealand or Chinese stock exchanges. This study shows some governance mechanisms have impacts on those markets, and the joint venture firms need to be aware of those mechanisms. If venture capital or New Zealand-based firms would like to list on Chinese exchanges, a well-known experienced chairman, a hardworking supervisory team, and a stable dominated shareholder will be advantage. For venture capital or Chinese-based firms listing on the NZSE, committees are compulsory.

From the late 1990s, China became one of the major source countries for immigrants to New Zealand. A total 14,745 Chinese gained permanent residence in New Zealand in 2002. According to the 2006 census, 78,117 migrants were born in China; the number is only less than migrants from England.[18] Most of those Chinese migrants are skilled migrants, but still a huge number of them are investment-based migrants. According to New Zealand Immigration Office policy, a person who invests at least $1.5 million in New Zealand is able to apply in the Investor Category. There are some options for those investment based migrants, but most Chinese migrants like to invest in the property market. Compared with

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[17] Refers to New Zealand Economic and Financial Overview 2012 External Sector, Principal Trading Partners.
[18] Refers to New Zealand Migrants, ENZ.

property, deposits, bonds and stocks offer relatively low returns which are unattractive to Chinese investors.

Such actions have raised a few issues. First, the irrational growth of property prices may cause problems for younger generations who may not be able to afford to buy property. The average trading price for a home is more than $650,000 in Auckland in 2012, which is extremely high for young people. Second, large amounts of property investment may lead to a high level of inflation. Third, property investment is not helpful to active the long-term economic growth.

Therefore, this study confirms that the government should discourage on property trading and encourage high net worth investment immigrants to invest beyond the property sector. Those investments are very important for the financing of New Zealand's domestic firms. This study suggests some options. First, immigration agents need to understand the investment environment in New Zealand, and be able to provide information on exchange, agriculture, and other opportunities available to migrants. Second, harsh punishment of unprofessional behaviour by agents is necessary. Many agents recommend properties to their clients because they can profit from the transaction. They can receive commissions from property agents or companies, Such actions are not fulfilling the interests of clients. Third, migrants may not understand how New Zealand companies are structured and organised; the lack of knowledge may stop them investing in local companies. Knowledge of corporate governance may promote wise IPO investments. A series of lectures, organised by the government or universities, could alleviate such problems. People with professional backgrounds are able to help migrants. Fourth, enforcement and follow up policies may necessary by the New Zealand government. The government may set a high tax payment on a property trading, or

enforce migrants to invest at least a percentage of their money on the stock exchange or on reconstruction of earthquake-hit Christchurch.

11.6 Limitation of the Study

The study has two major limitations. First, missing data raises a number of issues. Many governance variables are collected from annual reports and in some instances the required information is missing. Outliers and missing data are a problem in the New Zealand case. Consequently, many potentially important governance variables are omitted from the datasets because of significant missing data. Second, only three exchanges are included in the study.

11.7 Future Research

A number of issues have arisen through this current study which may be considered for future research. This thesis examines the impact of corporate governance practices on the short and longer-term sustainable returns of IPOs in New Zealand and Chinese A-shares only. Further research could expand the dataset including B class shares to investigate their relationship between IPOs and corporate governance mechanisms. Some firms list IPOs with both A and B shares. If there are differences then this opens a range of issues concerning the focus of international and national investors and regulatory arrangements impacting any nexus between A and B share returns.

In 2004 there was a restructure of the SZSE establishing a SME Board. The dataset of SME IPOs provides an opportunity to undertake a study similar to the current thesis but focused on smaller companies. Obviously a comparison of such results will be interesting to see whether smaller companies have higher risks at IPO and whether governance structures contribute to minimising this.

This thesis provides a comparison between two countries, one from which I came and one where I now live. Future research could expand the number of countries to make comparisons between more Asia-Pacific exchanges, viz Japan, Hong Kong, South Korean, Taiwan, Singapore, and also Australia. Will a Euronext like multinational exchange efficient in Asia-Pacific area? Such future studies will find the answer. The political, social, economic, ethnic, and religious diversity across nations are likely to impact on the connection between corporate governance and IPO performance. The specific attributes of corporate governance are likely to have different weighting and the diversity variables may be integrated into the analysis using dummy variables.

Finally, it is reasonable to expect that overtime the nature of the relationships discerned in this thesis may change. Follow up estimations as the Chinese economy matures will be of interest.

11.8 Conclusion of the Study

This chapter has summarized the study method, findings, contributions, implications, limitations, and potential for future research. This study examines the impact of corporate governance practices on the short- and longer-term sustainable returns of IPOs in China and New Zealand. Overall, the corporate governance factors play a significant role on the SHSE, SZSE, and NZSE's long-term IPO performance. And the corporate governance factors play a significant role on the SHSE, SZSE, and NZSE's short-term Tobin's Q and ROA, but have almost no effect on the abnormal first day return in all markets.

This study contributes to current literature in several ways. This study adds to the understanding of how different forms of governance impact the short and long-term IPO performance and tests the yearly sustainable long-term IPO performance. This study offers a

comparison between two Chinese stock markets, and comparisons between two countries. Also, this study uses a more robust empirical analysis, extending the commonly used OLS approach, with careful diagnostic testing and then applying a more appropriate model as appropriate.

This thesis results have a number of important implications. The commonality of corporate governance variables associated with successful performance has implications for companies preparing to list, exchanges attracting companies to list, investors looking for successful listings and policy makers wanting an efficient capital market. The difference in variables similarly provides insight for companies, exchanges, investors, and policy analysts. This study also suggests some options for the government should place restrictions on property trading and encourage high net worth investment immigrants to invest beyond the property sector.

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APPENDIX

Table 12.1 Correlation Matrix for SHSE Long-Term Variables

	yearly return	tobinsq	roa	mda	mdq	mde	pay
yearly return	1						
tobinsq	0.3868***	1					
	0						
roa	0.2185***	0.285***	1				
	0	0					
mda	0.0455**	-0.024	0.0472**	1			
	0.0133	0.1921	0.0101				
mdq	0.0723***	0.0408**	0.0598***	-0.1386***	1		
	0.0001	0.0263	0.0011	0			
mde	0.0638***	-0.0088	0.0803***	0.2409***	-0.0441**	1	
	0.0005	0.63	0	0	0.0162		
pay	0.1699***	0.0012	0.2925***	0.1468***	0.2087***	0.2178***	1
	0	0.9475	0	0	0	0	
boe	0.068***	0.0239	0.1073***	0.1269***	-0.0321*	0.3912***	0.182***
	0.0002	0.1924	0	0	0.0809	0	0
cmq	0.03	0.0225	0.0137	0.0023	0.3707***	-0.0286	0.0981***
	0.1022	0.2199	0.455	0.8995	0	0.1192	0
bos	0.014	-0.0861***	0.0752***	0.1543***	0.0437**	0.0721***	0.2049***
	0.4464	0	0	0	0.0174	0.0001	0
obo	0.0136	-0.2163***	-0.0821***	0.0125	0.0984***	0.1094***	0.2683***
	0.4578	0	0	0.4945	0	0	0
bof	-0.0109	-0.0372**	-0.0334*	-0.0175	0.0113	0.0279	0.0577***
	0.5516	0.0427	0.0689	0.3403	0.5372	0.1281	0.0017
sos	0.0066	-0.0485***	0.0271	0.0949***	0.0715***	-0.0013	0.0779***
	0.7205	0.0083	0.1396	0	0.0001	0.9434	0
mpy	0.1437***	0.0193	-0.0279	-0.002	0.082***	-0.0135	0.1965***
	0	0.293	0.1281	0.9149	0	0.4616	0
mpys	0.1487***	0.0951***	0.0394**	0.0479***	0.0493***	0.0203	0.1644***
	0	0	0.0319	0.0091	0.0072	0.2696	0
mos	-0.0145	0.0351**	0.0358**	-0.0865***	0.0606***	0.0636***	0.1135***
	0.4284	0.0561	0.0514	0	0.001	0.0005	0
soe	-0.0705***	-0.1228***	0.0787***	0.1096***	0.0127	-0.0646***	-0.1301***
	0.0001	0	0	0	0.4883	0.0004	0
lp	-0.0783***	0.0411**	-0.0554**	-0.1525***	-0.0595***	-0.1429***	-0.0728***
	0	0.0253	0.0025	0	0.0012	0	0.0001
us	-0.199***	-0.0951***	0.0495***	-0.06***	-0.0518***	-0.2482***	-0.248***
	0	0	0.007	0.0011	0.0048	0	0
noc	0.0825***	-0.0877***	-0.0034	0.057***	0.0863***	0.1812***	0.2891***
	0	0	0.8514	0.0019	0	0	0

lsh	-0.0039	-0.0331*	0.1888***	0.0388**	0.0061	-0.1192***	-0.1203***
	0.8315	0.0719	0	0.0344	0.7414	0	0
size	0.1366***	-0.2517***	0.1794***	0.2079***	0.2142***	0.0913***	0.4686***
	0	0	0	0	0	0	0
beta	-0.1772***	-0.2194***	-0.2404***	-0.0395**	-0.0963***	0.0206	-0.1258***
	0	0	0	0.0317	0	0.2615	0
labour	0.0861***	-0.1355***	0.1728***	0.1023***	0.0801***	0.0274	0.1586***
	0	0	0	0	0	0.1355	0
pcl	-0.0678***	0.1699***	0.0708***	-0.0858***	-0.0975***	-0.2263***	-0.3326***
	0.0002	0	0.0001	0	0	0	0
pcc	0.1033***	0.2991***	0.0645***	0.0373**	0.0339*	0.0821***	0.1101***
	0	0	0.0004	0.0423	0.0648	0	0
pctv	0.2159***	0.3137***	0.0692***	0.0369**	0.042**	0.0903***	0.1413***
	0	0	0.0002	0.0447	0.0223	0	0
pca	0.4096***	0.3827***	0.0771***	0.0345*	0.0404**	0.0722***	0.132***
	0	0	0	0.0601	0.0276	0.0001	0
pcas	-0.0538***	0.147***	0.0722***	-0.0747***	-0.0718***	-0.1915***	-0.2735***
	0.0034	0	0.0001	0	0.0001	0	0
pcpe	0.0373**	0.2828***	0.0583***	0.0466**	0.0273	0.0927***	0.1097***
	0.042	0	0.0015	0.0111	0.1378	0	0

	boe	cmq	bos	obo	bof	sos	mpy
boe	1						
cmq	0.0111	1					
	0.5443						
bos	-0.0214	0.0498***	1				
	0.2434	0.0066					
obo	0.1274***	0.0705***	-0.0614***	1			
	0	0.0001	0.0008				
bof	0.0941***	-0.0352*	0.1298***	0.0353*	1		
	0	0.0554	0	0.0548			
sos	-0.0881***	0.0271	0.3687***	-0.0979***	-0.0396**	1	
	0	0.1402	0	0	0.0311		
mpy	0.0197	0.0277	-0.0183	0.1747***	0.0435**	-0.0361**	1
	0.2826	0.132	0.3185	0	0.0178	0.0495	
mpys	0.028	0.0203	0.016	0.0599***	0.0637***	0.0372**	0.3824***
	0.1273	0.2691	0.3836	0.0011	0.0005	0.0426	0
mos	0.0741***	-0.04**	-0.0438**	0.0868***	0.01	-0.1117***	-0.0186
	0.0001	0.0295	0.0171	0	0.5875	0	0.3111
soe	-0.213***	-0.003	0.1407***	-0.1177***	-0.0602***	0.2165***	-0.1075***
	0	0.8707	0	0	0.001	0	0
lp	-0.0469**	-0.0287	0.0769***	-0.1054***	0.0185	-0.1241***	-0.0335*

	mpys	mos	soe	lp	us	noc	lsh
	0.0106	0.1181	0	0	0.3145	0	0.0679
us	-0.3265***	-0.054***	0.0702***	-0.2711***	-0.0558***	0.1042***	-0.1836***
	0	0.0033	0.0001	0	0.0024	0	0
noc	0.1741***	0.0635***	0.1102***	0.4807***	0.0252	0.0333*	0.1364***
	0	0.0005	0	0	0.1708	0.0696	0
lsh	-0.1564***	0.0094	-0.0317*	-0.1386***	-0.1109***	0.0549***	-0.0971***
	0	0.6078	0.0844	0	0	0.0028	0
size	0.0603***	0.1099***	0.3279***	0.1055***	0.0121	0.2861***	0.1824***
	0.001	0	0	0	0.5096	0	0
beta	0.0358*	-0.0704***	-0.0787***	0.0427**	-0.0171	-0.0333*	-0.0084
	0.0509	0.0001	0	0.0201	0.3521	0.0698	0.6475
labour	0.06***	0.0429**	0.1465***	0.0295	-0.0578***	0.2313***	0.0117
	0.0011	0.0194	0	0.1084	0.0016	0	0.5225
pcl	-0.2475***	-0.0602***	-0.004	-0.6061***	-0.0635***	0.0692***	-0.1676***
	0	0.001	0.829	0	0.0005	0.0002	0
pcc	0.0825***	0.0296	-0.0112	0.1408***	0.0242	-0.0201	0.1287***
	0	0.1073	0.5427	0	0.1884	0.2732	0
pctv	0.0953***	0.0311*	-0.0065	0.1894***	0.0266	-0.0243	0.1751***
	0	0.0904	0.7252	0	0.1476	0.1856	0
pca	0.0921***	0.0199	-0.0239	0.0418**	0.0133	-0.0203	0.2231***
	0	0.2794	0.1931	0.0228	0.4692	0.2703	0
pcas	-0.2151***	-0.0423**	-0.0081	-0.5293***	-0.0563***	0.0623***	-0.2227***
	0	0.0212	0.6576	0	0.0022	0.0007	0
pcpe	0.1049**	0.0257***	-0.0129***	0.123**	0.0227	-0.0216***	0.074***
	0.042	0	0.0015	0.0111	0.1378	0	0

	mpys	mos	soe	lp	us	noc	lsh
mpys	1						
mos	-0.0201	1					
	0.2737						
soe	-0.1267***	-0.2194***	1				
	0	0					
lp	-0.0854***	-0.0292	-0.6439***	1			
	0	0.1123	0				
us	-0.2754***	-0.0341*	0.4851***	0.2848***	1		
	0	0.0632	0	0			
noc	0.1363***	0.0755***	-0.0805***	-0.202***	-0.3331***	1	
	0	0	0	0	0		
lsh	-0.0907***	-0.2139***	0.4989***	-0.1403***	0.4108***	-0.2036***	1
	0	0	0	0	0	0	
size	0.1818***	-0.0823***	0.132***	-0.1687***	-0.0601***	0.1705***	0.1335***
	0	0	0	0	0.001	0	0

	size	beta	labour	pcl	pcc	pctv	pca
beta	-0.01	0.0284	-0.0419**	-0.0118	-0.0589***	-0.0105	-0.0908***
	0.5862	0.1222	0.0224	0.5208	0.0013	0.5658	0
labour	0.0645***	-0.0557***	0.129***	-0.1425***	-0.0267	0.073***	0.2195***
	0.0004	0.0024	0	0	0.1465	0.0001	0
pcl	-0.1388***	-0.0669***	0.161***	0.2044***	0.4492***	-0.5842***	0.2185***
	0	0.0003	0	0	0	0	0
pcc	0.1524***	0.012	-0.0804***	-0.0534***	-0.1535***	0.1812***	-0.1295***
	0	0.5136	0	0.0036	0	0	0
pctv	0.1617***	0.0172	-0.082***	-0.0635***	-0.1736***	0.2073***	-0.1346***
	0	0.3477	0	0.0005	0	0	0
pca	0.1958***	0.0079	-0.0991***	-0.0589***	-0.1992***	0.1364***	-0.1139***
	0	0.667	0	0.0013	0	0	0
pcas	-0.2055***	-0.0483	0.1456***	0.1712***	0.3952***	-0.5069***	0.1807***
	0	0.0085	0	0	0	0	0
pcpe	0.166***	-0.0051	-0.1244***	-0.0824***	-0.2497***	0.1558***	-0.1132***
	0	0.7817	0	0	0	0	0

	size	beta	labour	pcl	pcc	pctv	pca
size	1						
beta	-0.1946***	1					
	0						
labour	0.5788***	-0.1264***	1				
	0	0					
pcl	-0.1465***	-0.0309*	-0.0406**	1			
	0	0.0923	0.0271				
pcc	0.0532***	0.0203	0.0116	-0.2342***	1		
	0.0037	0.2691	0.527	0			
pctv	0.0666***	0.022	0.0168	-0.2261***	0.9579***	1	
	0.0003	0.2318	0.3601	0	0		
pca	0.0704***	0.0147	0.0244	-0.1199***	0.7043***	0.854***	1
	0.0001	0.4246	0.1838	0	0	0	
pcas	-0.1238***	-0.0094	-0.037**	0.8769***	-0.1651***	-0.1381***	-0.0588***
	0	0.6092	0.0439	0	0	0	0.0013
pcpe	0.0641***	0.016	0.0221	-0.1905***	0.879***	0.749***	0.3946***
	0.0005	0.3841	0.2288	0	0	0	0

	pcas	pcpe
pcas	1	
pcpe	-0.1558***	1
	0	

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

Table 12.2 Correlation Matrix for SHSE Short-Term Variables

	firstdayreturn	tobinsq	roa	mda	mdq	mde	pay
firstdayreturn	1						
tobinsq	0.5324***	1					
	0						
roa	-0.0921*	0.3611***	1				
	0.0628	0					
mda	-0.0545	-0.022	-0.0637	1			
	0.2718	0.6574	0.1987				
mdq	-0.0642	-0.0762	-0.0265	-0.2022***	1		
	0.1952	0.1241	0.5928	0			
mde	0.0515	0.025	-0.0068	0.0332	0.0369	1	
	0.2986	0.6148	0.8908	0.5037	0.4565		
pay	-0.2548***	-0.1973***	0.0848*	-0.0717	0.1693***	0.0532	1
	0	0.0001	0.0867	0.1479	0.0006	0.2835	
boe	0.0485	0.0051	-0.0063	-0.0214	0.0214	0.7478***	0.0516
	0.3274	0.9188	0.8986	0.6666	0.6658	0	0.2982
cmq	0.026	-0.0036	0.0059	0.0961*	0.2995***	0.0047	0.05
	0.5995	0.9416	0.905	0.0521	0	0.9244	0.3132
bos	-0.1351***	-0.1725***	-0.0781	0.0975**	0.1277***	0.0348	0.1785***
	0.0062	0.0005	0.1146	0.0488	0.0097	0.4832	0.0003
obo	-0.2636***	-0.5515***	-0.1956***	-0.0711	0.1365***	-0.0727	0.3574***
	0	0	0.0001	0.1514	0.0057	0.1423	0
bof	0.0459	-0.0437	-0.0546	-0.019	-0.0191	-0.023	0.0458
	0.3542	0.3776	0.2702	0.7017	0.7004	0.6434	0.3553
sos	-0.0596	-0.0805	-0.115**	0.0814	0.0621	-0.002	0.0007
	0.2293	0.1042	0.02	0.1003	0.2098	0.9685	0.9891
mpy	-0.1251**	-0.1846***	-0.0848*	-0.1243**	0.0728	-0.0817*	0.1882***
	0.0113	0.0002	0.0866	0.0119	0.1414	0.0989	0.0001
mpys	-0.0072	0.0597	0.0065	-0.0476	-0.0018	-0.0974**	-0.0433
	0.8839	0.2284	0.8953	0.337	0.9713	0.049	0.3821
mos	-0.0954*	-0.0524	0.0748	-0.1285***	0.0048	0.0546	0.2155***
	0.054	0.29	0.1308	0.0093	0.9223	0.2706	0
soe	0.007	-0.1498***	-0.056	0.1522***	-0.0249	-0.0299	-0.1229**
	0.8884	0.0024	0.2586	0.002	0.615	0.5463	0.0129
lp	-0.0118	0.189***	0.077	-0.1087**	0.004	0.007	0.1243**
	0.8126	0.0001	0.1198	0.028	0.936	0.8884	0.0119
us	-0.0713	0.1561***	0.19***	0.0076	-0.0103	-0.064	0.085*
	0.1499	0.0015	0.0001	0.8782	0.8354	0.1968	0.0862
noc	-0.1537***	-0.3166***	-0.0824*	0.0126	0.0555	-0.0386	0.1522***
	0.0018	0	0.0962	0.7995	0.2626	0.4366	0.002
lsh	-0.0926*	0.0835*	0.1455***	0.1051**	-0.0243	-0.006	-0.1982***
	0.0613	0.0919	0.0032	0.0337	0.6239	0.9037	0.0001
size	-0.4225***	-0.3508***	-0.0386	0.1042**	0.1491***	-0.0602	0.246***
	0	0	0.4363	0.0352	0.0025	0.2241	0
beta	0.3279***	0.1036**	-0.1443***	-0.0152	0.0515	-0.001	-0.1666***

	0	0.0362	0.0035	0.7586	0.2986	0.9845	0.0007
labour	-0.303***	-0.2143***	-0.0229	0.0934*	0.0279	-0.0058	-0.0466
	0	0	0.6438	0.0591	0.5737	0.9073	0.3467
pcl	0.2981***	0.6332***	0.1586***	0.0534	-0.1033**	0.0416	-0.2982***
	0	0	0.0013	0.2817	0.0368	0.4014	0
pcc	0.1128**	0.4544***	0.1495***	0.0188	-0.0644	0.0109	-0.175***
	0.0225	0	0.0024	0.7045	0.1935	0.8259	0.0004
pctv	-0.1831***	0.0953**	0.0845*	-0.0215	0.0273	-0.119**	0.0025
	0.0002	0.054	0.0879	0.6643	0.5825	0.016	0.9593
pca	0.2496***	0.6072***	0.1438***	0.0316	-0.0834*	-0.0065	-0.2649***
	0	0	0.0036	0.5242	0.092	0.896	0
pcas	0.1654***	0.513***	0.1454***	0.0079	-0.0725	-0.0253	-0.2167***
	0.0008	0	0.0032	0.8737	0.1435	0.6095	0
pcpe	0.0455	0.2798***	0.1063**	0.0106	-0.0429	0.0455	-0.079
	0.3585	0	0.0316	0.8301	0.3871	0.3587	0.1106

	boe	**cmq**	**bos**	**obo**	**bof**	**sos**	**mpy**
boe	1						
cmq	-0.0124	1					
	0.803						
bos	0.0166	0.0593	1				
	0.7377	0.2318					
obo	-0.0619	0.096*	0.2244***	1			
	0.2113	0.0524	0				
bof	0.0051	-0.0051	0.1878***	0.0852*	1		
	0.9181	0.9182	0.0001	0.0851			
sos	-0.0444	0.0373	0.3129***	-0.0541	0.0087	1	
	0.3701	0.4514	0	0.2751	0.861		
mpy	-0.0126	-0.0192	-0.0638	0.1554***	-0.042	0.042	1
	0.8001	0.6984	0.198	0.0016	0.3974	0.3974	
mpys	-0.102**	0.0608	-0.0609	-0.101**	0.0032	0.1077**	0.3027***
	0.0393	0.2196	0.2191	0.0411	0.949	0.0294	0
mos	0.0428	-0.1109**	0.0413	0.1812***	0.0563	-0.1247**	0.1028**
	0.388	0.0249	0.4044	0.0002	0.2561	0.0116	0.0377
soe	-0.0479	0.0848*	0.1135**	0.0492	-0.0098	0.215***	-0.0448
	0.3342	0.0868	0.0217	0.3206	0.8429	0	0.3665
lp	0.0187	-0.0993**	-0.0796	-0.0706	0.0189	-0.1618***	0.0061
	0.7068	0.0449	0.1078	0.1541	0.7035	0.001	0.9023
us	-0.0975**	-0.0424	0.0604	-0.1254**	0.0171	0.1471***	-0.0133
	0.0488	0.393	0.2228	0.0112	0.7301	0.0029	0.7885
noc	-0.0545	0.1125**	0.1869***	0.4866***	0.0268	0.0526	0.0687
	0.2712	0.0229	0.0001	0	0.5891	0.2886	0.1653
lsh	-0.0397	-0.0579	-0.0752	-0.1094**	-0.0656	0.0292	-0.123**
	0.4229	0.243	0.1288	0.0269	0.1858	0.556	0.0128
size	-0.0475	0.0103	0.2775***	0.0527	-0.0487	0.2782***	0.1327***
	0.3378	0.8355	0	0.2873	0.3258	0	0.0072

beta	-0.0465	0.0595	-0.0039	-0.0387	0.0908*	-0.0362	0.0011
	0.348	0.2298	0.9372	0.4353	0.0667	0.4648	0.9824
labour	0.0129	-0.1069**	0.1178**	-0.0183	-0.055	0.2219***	0.0636
	0.7951	0.0307	0.0172	0.7126	0.2674	0	0.1992
pcl	0.0411	-0.0468	-0.198***	-0.7395***	-0.1214**	0.005	-0.0967*
	0.4069	0.345	0.0001	0	0.0141	0.9204	0.0507
pcc	-0.0222	-0.0183	-0.1113**	-0.4506***	-0.102**	-0.0185	-0.0399
	0.6537	0.712	0.0244	0	0.0392	0.7096	0.4214
pctv	-0.1576***	0.0033	0.0295	-0.0284	-0.0235	-0.0114	0.0645
	0.0014	0.9474	0.5515	0.567	0.6351	0.8182	0.1928
pca	-0.0038	-0.069	-0.1859***	-0.6805***	-0.0945*	-0.0114	-0.1263**
	0.9391	0.1637	0.0002	0	0.0561	0.818	0.0106
pcas	-0.0776	-0.0755	-0.1983***	-0.5709***	-0.0884*	-0.0515	-0.1733***
	0.1173	0.1274	0.0001	0	0.0742	0.2991	0.0004
pcpe	0.0275	0.0215	-0.0214	-0.204***	-0.08	-0.0079	0.037
	0.5789	0.6646	0.6666	0	0.1061	0.874	0.456

	mpys	mos	soe	lp	us	noc	lsh
mpys	1						
mos	-0.0791	1					
	0.1101						
soe	0.1212**	-0.2985***	1				
	0.0141	0					
lp	-0.1247**	0.2155***	-0.9208***	1			
	0.0116	0	0				
us	0.0035	0.0675	0.0954*	0.0948*	1		
	0.944	0.173	0.0538	0.0555			
noc	-0.0479	0.0591	0.1182**	-0.1191**	-0.0698	1	
	0.334	0.2333	0.0168	0.016	0.1591		
lsh	0.0467	-0.2703***	0.4434***	-0.325***	0.2044***	-0.0827*	1
	0.3462	0	0	0	0	0.095	
size	0.0866*	-0.0768	0.2317***	-0.1543***	0.299***	0.077	0.1143**
	0.0803	0.1211	0	0.0017	0	0.1198	0.0207
beta	-0.0192	-0.0342	-0.007	0.0048	-0.0051	-0.0101	-0.0268
	0.6989	0.4899	0.8873	0.9221	0.9183	0.8387	0.5888
labour	0.0311	-0.0818*	0.139***	-0.102**	0.0626	0.0039	0.2699***
	0.5312	0.0984	0.0049	0.0393	0.2067	0.9375	0
pcl	0.2033***	-0.1675***	-0.0192	0.0393	0.1799***	-0.4127***	0.1359***
	0	0.0007	0.6991	0.4279	0.0003	0	0.0059
pcc	0.1494***	-0.0671	-0.0472	0.0587	0.1821***	-0.2136***	0.068
	0.0024	0.1754	0.3407	0.2358	0.0002	0	0.1699
pctv	0.0604	0.0396	-0.0967*	0.0881*	0.1403***	0.0214	-0.0238
	0.2226	0.4245	0.0508	0.0752	0.0045	0.6663	0.6311
pca	0.1611***	-0.1491***	-0.0307	0.0449	0.1717***	-0.4143***	0.1055**
	0.0011	0.0025	0.5363	0.3648	0.0005	0	0.033
pcas	0.045	-0.0921*	-0.1028**	0.1349***	0.1437***	-0.3584***	0.0798

	size	beta	labour	pcl	pcc	pctv	pca
	0.3639	0.0627	0.0376	0.0063	0.0036	0	0.1069
pcpe	0.1506***	-0.0146	0.0088	-0.0135	0.1465***	-0.0383	0.0272
	0.0023	0.7683	0.8595	0.7855	0.003	0.4395	0.5836

	size	beta	labour	pcl	pcc	pctv	pca
size	1						
beta	-0.2213***	1					
	0						
labour	0.5382***	-0.142***	1				
	0	0.004					
pcl	0.0144	0.0481	0.0547	1			
	0.772	0.3321	0.2701				
pcc	-0.0084	0.0422	0.0269	0.8209***	1		
	0.8653	0.3946	0.5876	0			
pctv	-0.0342	0.0382	-0.0199	0.2921***	0.7362***	1	
	0.4909	0.4414	0.6889	0	0		
pca	-0.0051	0.0442	0.0058	0.94***	0.7925***	0.372***	1
	0.9181	0.3721	0.9076	0	0	0	
pcas	-0.0502	0.0486	-0.0347	0.7404***	0.7521***	0.4757***	0.8529***
	0.3108	0.327	0.4846	0	0	0	0
pcpe	0.0144	0.019	0.0431	0.6357***	0.9135***	0.7243***	0.5465***
	0.7714	0.7014	0.3849	0	0	0	0

	pcas	pcpe
pcas	1	
pcpe	0.4356***	1
	0	

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

Table 12.3 Correlation Matrix for SZSE Long-Term Variables

	yearlyreturn	tobinsq	roa	mda	mdq	mde	pay
yearlyreturn	1						
tobinsq	0.2785***	1					
	0						
roa	0.2226***	0.3335***	1				
	0	0					
mda	-0.0126	-0.0359	0.0872***	1			
	0.6702	0.2255	0.0032				
mdq	0.0476	0.0802***	-0.0788***	-0.1428***	1		
	0.1081	0.0068	0.0078	0			
mde	-0.0004	-0.0108	0.0955***	0.3295***	0.0138	1	
	0.9893	0.7161	0.0012	0	0.6422		
pay	0.0361	-0.037	0.2164***	0.1365***	0.0607**	0.2184***	1
	0.2236	0.2127	0	0	0.0406	0	
boe	-0.0052	-0.0625**	0.1067***	0.1594***	0.0623**	0.4982***	0.2222***
	0.862	0.035	0.0003	0	0.0355	0	0
cmq	0.0345	0.1067***	0.0636**	0.0149	0.3742***	0.096***	0.1103***
	0.2441	0.0003	0.0318	0.6164	0	0.0012	0.0002
bos	-0.0112	-0.1535***	0.0349	0.071**	-0.0848***	0.0448	0.1636***
	0.7064	0	0.2396	0.0165	0.0042	0.1306	0
obo	0.013	-0.2306***	-0.0194	-0.0255	0.0526	0.1394***	0.3538***
	0.6605	0	0.513	0.3902	0.0761	0	0
bof	0.0169	0.0941***	0.0642**	-0.0267	-0.0275	-0.0024	0.0788***
	0.5685	0.0015	0.0302	0.3676	0.3539	0.9346	0.0078
sos	0.0136	-0.0948***	0.0467	-0.0257	0.0034	-0.0197	-0.0076
	0.6468	0.0014	0.1152	0.3862	0.9083	0.5073	0.7966
mpy	0.0669**	-0.0395	-0.0362	-0.0273	0.0886***	-0.0053	0.1651***
	0.024	0.1825	0.2217	0.3568	0.0028	0.8573	0
mpys	0.0272	0.0536*	0.0245	0.0255	0.0257	0.0031	0.0929***
	0.3598	0.0708	0.4091	0.39	0.3866	0.9157	0.0017
mos	0.0118	0.1044***	0.184***	-0.0895***	0.0035	0.0056	0.1271***
	0.6916	0.0004	0	0.0025	0.9053	0.8497	0
soe	-0.0271	-0.1358***	-0.067**	0.0455	-0.0601**	-0.0852***	-0.2271***
	0.3613	0	0.0238	0.1249	0.0425	0.004	0
lp	-0.0494*	0.0973***	-0.0298	-0.1192***	0.0624**	-0.0866***	-0.1052***
	0.0953	0.001	0.315	0.0001	0.0353	0.0034	0.0004
us	-0.076**	-0.0271	-0.0399	-0.0963***	-0.0221	-0.2218***	-0.3742***
	0.0103	0.3611	0.1785	0.0011	0.4566	0	0
boc	0.053*	-0.0854***	-0.0071	0.0957***	-0.0429	0.2208***	0.2901***
	0.0739	0.0039	0.812	0.0012	0.1481	0	0

lsh	0.0354	-0.0631**	0.0371	-0.049*	-0.073**	-0.1189***	-0.3067***
	0.2328	0.0331	0.2107	0.0981	0.0138	0.0001	0
size	0.0675**	0.3328***	0.0852***	0.1934	-0.0035	0.1523***	0.3964***
	0.0227	0	0.004	0	0.9059	0	0
beta	-0.1934***	-0.234***	-0.2606***	-0.0718**	0.0142	-0.0256	-0.0816***
	0	0	0	0.0154	0.6326	0.3887	0.0058
labour	0.0265	-0.2237***	0.0793***	0.1757***	0.0847***	0.086***	0.1252***
	0.3711	0	0.0074	0	0.0042	0.0037	0
pcl	0.1026***	0.2586***	0.1215***	0.0501*	0.0605**	0.1773***	0.3088***
	0.0005	0	0	0.0909	0.0413	0	0
pcc	0.0505*	0.3619***	0.1264***	0.0216	0.0389	0.1038***	0.1689***
	0.0885	0	0	0.4658	0.1896	0.0004	0
pctv	0.0186	0.3028***	0.1085***	0.0147	0.0434	0.087***	0.1578***
	0.5314	0	0.0002	0.6195	0.1428	0.0033	0
pca	0.0898***	0.381***	0.1257***	0.0112	0.0342	0.0408	0.0867***
	0.0024	0	0	0.7047	0.2492	0.1686	0.0034
pcas	0.0719**	0.2522***	0.0601**	0.0105	-0.0247	0.1131***	-0.1805***
	0.0152	0	0.0425	0.7226	0.4055	0.0001	0
pcpe	0.021	0.3172***	0.1126***	0.0254	0.0289	0.1182***	0.1677***
	0.4796	0	0.0001	0.3923	0.3291	0.0001	0

	boe	cmq	bos	obo	bof	sos	mpy
boe	1						
cmq	-0.0185	1					
	0.5318						
bos	0.0816***	-0.0368	1				
	0.0059	0.215					
obo	0.2461***	0.0745**	-0.0626**	1			
	0	0.0119	0.0347				
bof	0.0195	0.0314	0.1068***	0.0338	1		
	0.5109	0.29	0.0003	0.2548			
sos	-0.038	0.0662**	0.3024***	-0.089***	-0.0188	1	
	0.2002	0.0255	0	0.0027	0.5269		
mpy	0.0023	0.0464	-0.0378	0.2216***	0.0867***	0.0029	1
	0.9393	0.1172	0.2026	0	0.0034	0.9222	
mpys	0.0031	0.0805***	-0.0892***	0.1305***	0.0447	-0.0243	0.366***
	0.9178	0.0065	0.0026	0	0.1319	0.4132	0
mos	-0.03	0.0471	0.1357***	-0.1632***	0.0739**	0.1835***	0.0212
	0.3117	0.112	0	0	0.0127	0	0.4745
soe	-0.0679**	0.019	0.184***	0.2068***	-0.0308	0.2377***	-0.152***
	0.0218	0.5227	0	0	0.299	0	0
lp	-0.1007***	-0.0243	-0.111***	-0.0658**	0.0409	-	0.0152

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						0.1729***	
	0.0007	0.4134	0.0002	0.0264	0.1682	0	0.6084
us	-0.2419***	0.0098	0.0674**	-0.3206***	0.0184	0.0611**	-0.1745***
	0	0.7403	0.0229	0	0.5345	0.0392	0
boc	0.2518***	0.0063	0.0442	0.4902***	-0.0068	0.0125	0.277***
	0	0.8321	0.1363	0	0.8195	0.6744	0
lsh	-0.1135***	-0.079***	0.0593**	0.2465***	-0.0464	0.0828***	-0.1823***
	0.0001	0.0077	0.0455	0	0.1177	0.0052	0
size	0.1893***	0.0617**	0.2761***	0.0996***	-0.1313***	0.1925***	0.1354***
	0	0.0375	0	0.0008	0	0	0
beta	-0.0265	-0.0263	-0.0057	-0.0297	-0.0092	0.0321	-0.0038
	0.3713	0.3746	0.8481	0.316	0.7558	0.2793	0.8972
labour	0.1734***	-0.0722**	0.2168***	0.0303	-0.1556***	0.0727**	-0.0098
	0	0.0148	0	0.307	0	0.0142	0.7405
pcl	0.2358***	0.0705**	-0.0976***	0.3321***	0.0293	-0.0745**	0.2271***
	0	0.0173	0.001	0	0.3235	0.0119	0
pcc	0.1609***	0.0423	-0.0538*	0.2109***	0.0168	-0.0431	0.1069***
	0	0.154	0.0697	0	0.5704	0.1464	0.0003
pctv	0.1573***	0.0372	-0.0459	0.2583***	0.0152	-0.0385	0.146***
	0	0.2092	0.1212	0	0.6095	0.1945	0
pca	0.0832***	0.0241	-0.0678**	0.0586**	-0.0107	-0.0294	0.1694***
	0.0049	0.4161	0.0221	0.0481	0.7189	0.3212	0
pcas	-0.1828***	-0.0063	-0.0373	0.4822***	-0.0284	0.0032	-0.0871***
	0	0.8312	0.209	0	0.338	0.9139	0.0033
pcpe	0.1612***	0.0415	-0.0444	0.1836***	0.0256	-0.0437	0.0367
	0	0.1613	0.1338	0	0.3882	0.1405	0.2153

	mpys	**mos**	**soe**	**lp**	**us**	**boc**	**lsh**
mpys	1						
mos	-0.0106	1					
	0.7196						
soe	-0.1051***	-0.3233***	1				
	0.0004	0					
lp	-0.0166	-0.0168	-0.618***	1			
	0.5749	0.5717	0				
us	-0.1468***	0.0782***	0.5446***	0.2316***	1		
	0	0.0083	0	0			
boc	0.2187***	-0.0065	0.2488***	-0.0689**	-0.4421***	1	
	0	0.827	0	0.02	0		
lsh	-0.048	-0.2596***	0.5503***	-0.1339***	0.4955***	0.2638***	1
	0.1051	0	0	0	0	0	

size	0.0886***	-0.1457***	-0.1607***	-0.2662***	-0.1266***	-0.1474***	-0.1198***
	0.0028	0	0	0	0	0	0.0001
beta	-0.0514*	-0.0199	0.0222	-0.0121	0.0124	-0.0161	0.0061
	0.0832	0.5028	0.4546	0.683	0.6768	0.5865	0.838
labour	0.0235	-0.104***	0.116***	-0.1607***	-0.0649**	0.0497*	-0.1403***
	0.4275	0.0004	0.0001	0	0.0284	0.0938	0
pcl	0.2083***	0.1083***	-0.3135***	-0.1026***	-0.5125***	-0.4356***	-0.2492***
	0	0.0002	0	0.0005	0	0	0
pcc	0.0746**	0.0743**	-0.2103***	-0.0467	-0.3162***	-0.238***	-0.1768***
	0.0118	0.0121	0	0.115	0	0	0
pctv	0.0726**	0.0912***	-0.1732***	-0.0276	-0.2452***	-0.2427***	-0.1832***
	0.0142	0.0021	0	0.3514	0	0	0
pca	0.1292***	0.068**	-0.1345***	-0.0183	-0.1846***	-0.1636***	-0.1229***
	0	0.0218	0	0.5368	0	0	0
pcas	-0.0172	-0.0923***	0.0747**	0.0232	0.1116***	-0.235***	0.1822***
	0.561	0.0018	0.0117	0.4336	0.0002	0	0
pcpe	0.054*	0.0459	-0.2172***	-0.0637**	-0.3498***	-0.2101***	-0.1569***
	0.0686	0.1212	0	0.0317	0	0	0

	size	**beta**	**labour**	**pcl**	**pcc**	**pctv**	**pca**
size	1						
beta	-0.082***	1					
	0.0056						
labour	0.5976***	-0.091***	1				
	0	0.0021					
pcl	0.1391***	-0.0662**	0.0303	1			
	0	0.0255	0.3071				
pcc	0.0683**	-0.0437	0.0169	0.7111***	1		
	0.0211	0.1403	0.5685	0			
pctv	0.0566*	-0.0348	0.014	0.7308***	0.9481***	1	
	0.0564	0.2402	0.6367	0	0		
pca	0.0391	-0.0347	0.0079	0.694***	0.7807***	0.8589***	1
	0.1869	0.2425	0.7912	0	0	0	
pcas	-0.036	-0.0499*	0.0085	0.099***	-0.0803***	-0.1757***	-0.0087
	0.2242	0.0926	0.7742	0.0008	0.0067	0	0.7691
pcpe	0.072**	-0.0444	0.0188	0.5608***	0.9073***	0.7597***	0.4657***
	0.0151	0.1346	0.527	0	0	0	0

	pcas	**pcpe**
pcas	1	
pcpe	-0.0581**	1
	0.05	

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

Table 12.4 Correlation Matrix for SZSE Short-Term Variables

	firstdayreturn	tobinsq	roa	mda	mdq	mde	pay
firstdayreturn	1						
tobinsq	0.6652***	1					
	0						
roa	-0.0877	0.2474***	1				
	0.2991	0.003					
mda	0.0331	-0.0164	-0.0921	1			
	0.6954	0.8468	0.2756				
mdq	0.0997	0.129	0.0573	-0.0886	1		
	0.2377	0.1259	0.4981	0.2947			
mde	-0.0001	0.0289	0.0047	0.0064	0.0317	1	
	0.9992	0.7329	0.9562	0.9395	0.7076		
pay	-0.004	-0.0237	0.1254	-0.0012	0.0208	-0.0345	1
	0.9628	0.7797	0.1371	0.9888	0.8062	0.6834	
boe	0.017	0.0715	-0.0111	-0.041	-0.0292	0.8366***	-0.0355
	0.8411	0.3978	0.8958	0.6283	0.7303	0	0.6752
cmq	0.063	0.1448*	0.2215***	-0.0241	0.4049***	0.0308	0.1396*
	0.4567	0.0855	0.0081	0.7759	0	0.7163	0.0974
bos	0.1361	0.0126	-0.072	0.0304	-0.0347	0.0808	0.0582
	0.1062	0.8815	0.3943	0.7195	0.6821	0.3392	0.4918
obo	-0.335***	-0.4252***	0.1313	-0.1123	-0.059	0.1021	0.4716***
	0	0	0.1193	0.1833	0.4852	0.2268	0
bof	0.1137	0.0649	0.0175	-0.0141	0.1112	-0.0446	0.0677
	0.1777	0.443	0.8359	0.8678	0.1875	0.5981	0.4232
sos	0.1154	0.0485	0.0167	-0.1092	0.0969	0.071	-0.1056
	0.1716	0.5662	0.8436	0.196	0.2511	0.401	0.211
mpy	0.0966	-0.0552	0.0823	-0.0083	0.0538	-0.0496	0.063
	0.2528	0.5139	0.3302	0.9216	0.5246	0.5581	0.4561
mpys	0.0916	0.0412	-0.1414*	-0.0411	0.1169	0.0391	-0.0817
	0.2783	0.6265	0.0933	0.6276	0.1658	0.6445	0.3339
mos	-0.2664***	-0.257***	0.1861**	-0.1641*	-0.008	-0.0521	0.2524
	0.0014	0.002	0.0266	0.051	0.9243	0.5378	0.0024
soe	0.0889	0.1585*	-0.0715	0.0609	-0.0308	0.1096	-0.2717***
	0.2926	0.0596	0.3979	0.4717	0.7158	0.1943	0.0011
lp	-0.0014	-0.0032	0.0661	-0.055	0.0025	-0.0909	0.1204
	0.9866	0.9695	0.4345	0.5157	0.9768	0.2821	0.1536
us	0.0255	0.1514*	0.0748	-0.0459	-0.1153	0.0444	-0.1857**
	0.7637	0.0721	0.3762	0.5878	0.1718	0.6	0.0269
boc	-0.2701***	-0.3098***	0.0313	-0.0695	-0.0831	0.2501***	0.1772**
	0.0011	0.0002	0.7113	0.411	0.3255	0.0027	0.0349
lsh	0.0107	0.1122	-0.0489	-0.0124	-0.1143	-0.0925	-0.3643***
	0.8995	0.1837	0.5637	0.8833	0.1754	0.2733	0
size	-0.1652**	-0.2136**	-0.1591*	0.1372	-0.01	-0.0427	0.0014
	0.0495	0.0107	0.0586	0.1034	0.9058	0.614	0.9864
beta	0.0442	-0.104	-0.2064**	0.0076	-0.0315	0.1385	0.0559

	0.6018	0.2182	0.0137	0.9281	0.71	0.1002	0.5088
labour	-0.2503***	-0.2422***	-0.096	0.1437*	-0.1216	-0.059	-0.151*
	0.0027	0.0037	0.2556	0.088	0.1493	0.4857	0.0728
pcl	0.3037***	0.3801***	-0.1384	0.1497*	0.0862	-0.1327	-0.4006***
	0.0002	0	0.1004	0.0754	0.3076	0.1155	0
pcc	0.3669***	0.3919***	-0.2812***	0.0996	0.0458	0.1059	-0.2526***
	0	0	0.0007	0.2381	0.5887	0.2097	0.0024
pctv	0.2555***	0.2211***	-0.2835***	0.0069	-0.0131	0.2787***	0.0022
	0.0021	0.0082	0.0006	0.9355	0.8768	0.0008	0.979
pca	0.3635***	0.3834***	-0.2867***	0.0929	0.0411	0.124	-0.2336***
	0	0	0.0005	0.2717	0.627	0.1414	0.0051
pcas	0.3182***	0.3911***	-0.1574*	0.1481*	0.0841	-0.1103	-0.3948***
	0.0001	0	0.0614	0.0786	0.3199	0.1912	0
pcpe	0.3698***	0.4022***	-0.2711***	0.1091	0.0524	0.0781	-0.2794***
	0	0	0.0011	0.1961	0.5358	0.3556	0.0008

	boe	cmq	bos	obo	bof	sos	mpy
boe	1						
cmq	-0.0064	1					
	0.9395						
bos	0.015	0.0461	1				
	0.8595	0.5858					
obo	0.0452	0.0633	-0.0021	1			
	0.5936	0.4541	0.9804				
bof	-0.0291	0.0666	0.0378	0.0602	1		
	0.731	0.4313	0.6549	0.4764			
sos	0.0122	0.1797**	0.2157***	-0.085	-0.0557	1	
	0.8858	0.0323	0.0099	0.3148	0.5106		
mpy	-0.0902	0.0435	-0.0102	0.1189	0.1669**	0.1383	1
	0.2855	0.6069	0.9041	0.1586	0.0471	0.1007	
mpys	-0.0089	0.0167	0.0351	-0.0915	-0.0243	0.2331***	0.2911***
	0.9162	0.8437	0.678	0.2788	0.774	0.0052	0.0004
mos	-0.0552	0.0448	-0.0415	0.6211***	0.1464*	-0.2332***	0.0804
	0.5144	0.5961	0.6241	0	0.0821	0.0052	0.3417
soe	0.1362	-0.0015	0.0054	-0.4774***	-0.1439*	0.1936**	-0.1129
	0.1059	0.9858	0.9493	0	0.0875	0.021	0.1811
lp	-0.1054	-0.01	-0.0169	0.2619***	0.1555*	-0.186**	0.0528
	0.2119	0.9062	0.842	0.0016	0.0647	0.0267	0.5326
us	0.0519	0.108	-0.006	-0.1276	0.053	0.0532	-0.1052
	0.5395	0.2006	0.9439	0.1301	0.5312	0.5295	0.2128
boc	0.2336***	-0.123	0.0013	0.5305***	-0.0754	-0.0345	0.078
	0.0051	0.1447	0.9877	0	0.3726	0.684	0.3565
lsh	-0.034	-0.0867	-0.027	-0.4687***	-0.1679**	0.0211	-0.1771**
	0.688	0.3048	0.7498	0	0.0458	0.803	0.035
size	-0.1176	-0.0289	0.2133**	-	-0.1846**	0.0979	-0.0322

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				0.2611***			
	0.1635	0.7327	0.0108	0.0017	0.0278	0.2464	0.704
beta	0.1351	0.0356	0.0451	0.1063	-0.0563	0.0588	0.0167
	0.1088	0.6736	0.5941	0.2082	0.5059	0.4871	0.8432
labour	-0.0677	-0.1073	0.0948	-0.1287	-0.1125	0.0852	-0.0156
	0.4237	0.2038	0.262	0.127	0.1825	0.3131	0.854
pcl	-0.1227	-0.0098	-0.0066	-0.8936***	-0.0843	0.1064	-0.0661
	0.1457	0.9081	0.938	0	0.3188	0.2076	0.4343
pcc	0.1333	-0.0672	0.0419	-0.7473***	-0.1058	0.1188	-0.18**
	0.1137	0.4266	0.6205	0	0.2102	0.1591	0.0321
pctv	0.3096***	-0.0895	0.0676	-0.2644***	-0.0767	0.0752	-0.2024**
	0.0002	0.2895	0.4243	0.0015	0.364	0.3737	0.0157
pca	0.1523*	-0.0706	0.0451	-0.7164***	-0.1051	0.117	-0.1855**
	0.0704	0.4039	0.5942	0	0.2132	0.1656	0.0271
pcas	-0.0982	-0.0162	-0.0015	-0.9007***	-0.0887	0.1104	-0.0801
	0.2449	0.8481	0.9856	0	0.2937	0.1907	0.3434
pcpe	0.1041	-0.0618	0.0369	-0.7888***	-0.1062	0.1208	-0.1706**
	0.2177	0.465	0.6632	0	0.2085	0.1523	0.0424

	mpys	**mos**	**soe**	**lp**	**us**	**boc**	**lsh**
mpys	1						
mos	-0.1032	1					
	0.2215						
soe	0.0604	-0.4219***	1				
	0.475	0					
lp	-0.0816	0.2048**	-0.8449***	1			
	0.3341	0.0145	0				
us	-0.0353	0.071	0.2324***	0.0883	1		
	0.6768	0.4012	0.0054	0.2959			
boc	-0.1244	0.1769**	-0.3104***	0.3062***	-0.1307	1	
	0.1403	0.0352	0.0002	0.0002	0.1211		
lsh	-0.121	-0.4021***	0.4938***	-0.2343***	0.2939***	-0.2485***	1
	0.1515	0	0	0.005	0.0004	0.0029	
size	0.057	-0.2165***	0.3547***	-0.3394***	0.0002	-0.1825**	0.2955***
	0.5005	0.0096	0	0	0.9978	0.0297	0.0004
beta	-0.0589	0.02	0.0552	-0.0864	-0.0023	0.1976**	-0.0973
	0.4862	0.8132	0.5141	0.3066	0.9786	0.0184	0.2492
labour	0.113	-0.2001**	0.223***	-0.2224***	0.0096	-0.0284	0.3234***
	0.1807	0.0169	0.0076	0.0078	0.9101	0.7372	0.0001
pcl	0.2015**	-0.6738***	0.4839***	-0.3013***	-0.0036	-0.576***	0.4678***
	0.0162	0	0	0.0003	0.9657	0	0

pcc	0.238***	-0.5855***	0.443***	-0.3119***	0.0132	-0.4999***	0.3102***
	0.0043	0	0	0.0002	0.8765	0	0.0002
pctv	0.1615**	-0.2318***	0.1993**	-0.177**	0.0227	-0.1971**	0.0197
	0.0548	0.0055	0.0174	0.0351	0.7888	0.0187	0.8158
pca	0.2353***	-0.5636***	0.4286***	-0.3052***	0.0143	-0.4811***	0.289***
	0.0048	0	0	0.0002	0.8659	0	0.0005
pcas	0.2106**	-0.6815***	0.4919***	-0.3102***	-0.0019	-0.5825***	0.4627***
	0.0119	0	0	0.0002	0.9819	0	0
pcpe	0.2404***	-0.6146***	0.4617***	-0.3199***	0.0114	-0.5248***	0.34***
	0.004	0	0	0.0001	0.8931	0	0

	size	**beta**	**labour**	**pcl**	**pcc**	**pctv**	**pca**
size	1						
beta	-0.1113	1					
	0.1874						
labour	0.6023***	-0.1068	1				
	0	0.2059					
pcl	0.3451***	-0.1817**	0.1901**	1			
	0	0.0305	0.0234				
pcc	0.2755***	0.0419	0.1111	0.7387***	1		
	0.0009	0.6204	0.1882	0			
pctv	0.083	0.2304***	-0.014	0.1529*	0.779***	1	
	0.3261	0.0058	0.8687	0.0693	0		
pca	0.2628***	0.0603	0.1015	0.698***	0.9983***	0.8144***	1
	0.0016	0.476	0.2294	0	0	0	
pcas	0.3464***	-0.1622*	0.1865**	0.9974***	0.7857***	0.2243***	0.7482***
	0	0.0538	0.0263	0	0	0.0073	0
pcpe	0.2929***	0.0141	0.1247	0.7949***	0.9962***	0.7211***	0.9893***
	0.0004	0.8676	0.1392	0	0	0	0

	pcas	**pcpe**
pcas	1	
pcpe	0.8369***	1
	0	

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

Table 12.5 Correlation Matrix for NZSE Long-Term Variables

	yearlyreturn	tobinsq	roa	mde	mdp	boe	bos
yearlyreturn	1						
tobinsq	0.0959**	1					
	0.033						
roa	0.182***	-0.1388***	1				
	0	0.002					
mde	0.1062**	-0.0301	0.0371	1			
	0.0182	0.5041	0.411				
mdp	0.1726***	-0.2145***	0.2433***	0.1555***	1		
	0.0001	0	0	0.0005			
boe	0.0893**	-0.0302	0.042	0.4913***	0.0732	1	
	0.0474	0.5027	0.3512	0	0.1042		
bos	0.1077**	-0.1913***	0.133***	-0.0372	0.389***	0.0459	1
	0.0167	0	0.0031	0.4089	0	0.3082	
obo	0.0641	-0.1077**	0.0884**	-0.0073	0.2827***	0.0202	0.1976***
	0.1549	0.0166	0.0496	0.8717	0	0.6544	0
bof	0.0112	-0.0894**	0.0833*	-0.012	0.0441	0.0235	0.1548***
	0.8037	0.0471	0.0643	0.7901	0.3281	0.6026	0.0006
is	0.0582	0.1718***	0.0367	0.0622	0.1482***	0.0755*	0.0815*
	0.1963	0.0001	0.4152	0.1676	0.001	0.0936	0.0705
mos	-0.0527	0.2674***	-0.0486	-0.0684	-0.4541***	0.0234	-0.2053***
	0.2424	0	0.2813	0.129	0	0.6038	0
lsh	0.0314	0.0898**	0.0485	0.0571	-0.0595	0.05	-0.1673***
	0.4867	0.0461	0.2825	0.2051	0.187	0.2671	0.0002
de	-0.009	-0.0618	0.0284	0.0645	0.1018**	0.0958**	0.0944**
	0.842	0.1702	0.5282	0.1522	0.0237	0.0333	0.0359
sal	0.0475	-0.0199	0.2927***	0.243***	0.2782***	0.2382***	0.2305***
	0.2921	0.6597	0	0	0	0	0

	obo	bof	is	mos	lsh	de	sal
obo	1						
bof	-0.057	1					
	0.2064						
is	0.0362	-0.0344	1				
	0.4215	0.4457					
mos	-0.3763***	0.0312	0.0464	1			
	0	0.4896	0.3037				
lsh	-0.2899***	-0.0827*	0.5637***	0.393***	1		
	0	0.0664	0	0			
de	0.0767*	0.058	-0.0559	0.1044**	-0.1503***	1	
	0.0885	0.1978	0.2147	0.0203	0.0008		
sal	0.0771*	0.111**	0.2055***	-0.0829*	0.0991**	0.2481***	1
	0.087	0.0136	0	0.0657	0.0276	0	

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

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Table 12.6 Correlation Matrix for NZSE Short-Term Variables

	firstdayreturn	tobinsq	roa	mde	mdp	boe	bos
firstdayreturn	1						
tobinsq	0.0321	1					
	0.7744						
roa	0.1921*	-0.0324	1				
	0.0839	0.7726					
mde	0.0019	-0.0778	0.0324	1			
	0.9862	0.4874	0.7726				
mdp	0.3139***	-0.0401	0.334***	-0.0362	1		
	0.0041	0.7209	0.0022	0.7468			
boe	-0.1486	-0.0879	0.0521	0.318***	-0.1934*	1	
	0.1828	0.4323	0.642	0.0036	0.0818		
bos	-0.0346	-0.208*	0.0301	-0.1548	0.3242***	-0.0359	1
	0.7575	0.0607	0.7883	0.165	0.003	0.7485	
obo	0.1751	-0.1641	0.1547	0.0223	0.4341***	-0.0092	0.2422**
	0.1156	0.1408	0.1652	0.8423	0	0.9348	0.0284
bof	-0.0143	-0.0043	0.0141	-0.1263	0.1653	-0.1027	0.1683
	0.8987	0.9694	0.8997	0.2583	0.1378	0.3587	0.1308
is	0.0088	0.1593	0.1116	0.0905	0.1186	0.1757	0.0883
	0.9375	0.1529	0.318	0.4187	0.2884	0.1144	0.4301
mos	-0.1554	0.4276***	0.0058	-0.1541	-0.3957***	-0.0367	-0.2692**
	0.1632	0.0001	0.9588	0.167	0.0002	0.7436	0.0145
lsh	-0.054	0.1146	0.0606	-0.0213	-0.1828	0.0456	-0.1711
	0.6298	0.3053	0.5888	0.8493	0.1002	0.6843	0.1243
de	0.048	-0.1165	0.2573**	-0.1043	0.2298**	-0.1156	0.0943
	0.6683	0.2972	0.0196	0.3508	0.0378	0.3009	0.3995
sal	0.0098	-0.0852	0.333***	-0.0793	0.2536**	-0.0907	0.2887***
	0.9307	0.4468	0.0022	0.4789	0.0215	0.4176	0.0085

	obo	bof	is	mos	lsh	de	sal
obo	1						
bof	0.0189	1					
	0.8663						
is	0.0884	-0.0976	1				
	0.4296	0.383					
mos	-0.4953***	-0.035	0.0468	1			
	0	0.7551	0.6761				
lsh	-0.3163***	-0.0707	0.5532***	0.3614***	1		
	0.0038	0.5282	0	0.0009			
de	0.2206**	0.0332	0.0978	-0.0663	-0.0166	1	
	0.0464	0.7672	0.3821	0.5538	0.8822		
sal	0.1851*	-0.0622	-0.0966	-0.1968*	-0.15	0.2894***	1
	0.0959	0.5786	0.388	0.0763	0.1787	0.0084	

Note: ***, **, and *, indicate that the p-value is significant at the 1%, 5%, and 10% levels, respectively.

Table 12.7 IPOs Listed in SHSE

Code	IPOs	Listing Date
600195	中牧实业股份有限公司	7/01/1999
600201	内蒙古金宇集团股份有限公司	15/01/1999
600228	江西昌九生物化工股份有限公司	19/01/1999
600167	联美控股股份有限公司	28/01/1999
600266	北京城建投资发展股份有限公司	3/02/1999
600007	中国国际贸易中心股份有限公司	12/03/1999
600206	有研半导体材料股份有限公司	19/03/1999
600209	罗顿发展股份有限公司	25/03/1999
600200	江苏吴中实业股份有限公司	1/04/1999
600175	美都控股股份有限公司	8/04/1999
600173	卧龙地产集团股份有限公司	15/04/1999
600176	中国玻纤股份有限公司	22/04/1999
600359	新疆塔里木农业综合开发股份有限公司	29/04/1999
600182	佳通轮胎股份有限公司	7/05/1999
600203	福建福日电子股份有限公司	14/05/1999
600193	厦门创兴置业股份有限公司	27/05/1999
600202	哈尔滨空调股份有限公司	3/06/1999
600190	锦州港股份有限公司	9/06/1999
600185	西安格力地产股份有限公司	11/06/1999
600141	湖北兴发化工集团股份有限公司	16/06/1999
600208	新湖中宝股份有限公司	23/06/1999
600205	山东铝业股份有限公司	30/06/1999
600146	宁夏大元化工股份有限公司	7/07/1999
600207	河南安彩高科股份有限公司	14/07/1999
600211	西藏诺迪康药业股份有限公司	21/07/1999
600006	东风汽车股份有限公司	27/07/1999
600005	武汉钢铁股份有限公司	3/08/1999
600003	东北高速公路股份有限公司	10/08/1999
600212	山东江泉实业股份有限公司	17/08/1999
600210	上海紫江企业集团股份有限公司	24/08/1999
600213	扬州亚星客车股份有限公司	31/08/1999
600215	长春经开(集团)股份有限公司	9/09/1999
600197	新疆伊力特实业股份有限公司	16/09/1999
600145	重庆四维控股（集团）股份有限公司	23/09/1999
600220	江苏阳光股份有限公司	27/09/1999
600149	华夏建通科技开发股份有限公司	14/10/1999
600216	浙江医药股份有限公司	21/10/1999
600222	河南竹林众生制药股份有限公司	5/11/1999
600000	上海浦东发展银行股份有限公司	10/11/1999
600226	浙江升华拜克生物股份有限公司	16/11/1999
600268	国电南京自动化股份有限公司	18/11/1999
600221	海南航空股份有限公司	25/11/1999
600239	云南城投置业股份有限公司	2/12/1999
600286	湖南国光瓷业集团股份有限公司	9/12/1999

600217	陕西秦岭水泥股份有限公司	16/12/1999
600219	山东南山实业股份有限公司	23/12/1999
600223	鲁商置业股份有限公司	13/01/2000
600238	海南椰岛(集团)股份有限公司	20/01/2000
600225	天津松江股份有限公司	27/01/2000
600227	贵州赤天化股份有限公司	21/02/2000
600500	中化国际（控股）股份有限公司	1/03/2000
600229	青岛碱业股份有限公司	9/03/2000
600236	广西桂冠电力股份有限公司	23/03/2000
600230	沧州大化股份有限公司	6/04/2000
600299	蓝星化工新材料股份有限公司	20/04/2000
600008	北京首创股份有限公司	27/04/2000
600231	凌源钢铁股份有限公司	11/05/2000
600269	江西赣粤高速公路股份有限公司	18/05/2000
600259	广晟有色金属股份有限公司	25/05/2000
600256	新疆广汇实业股份有限公司	26/05/2000
600258	北京首都旅游股份有限公司	1/06/2000
600232	浙江金鹰股份有限公司	2/06/2000
600233	大连大杨创世股份有限公司	8/06/2000
600237	安徽铜峰电子股份有限公司	9/06/2000
600257	湖南洞庭水殖股份有限公司	12/06/2000
600234	太原天龙集团股份有限公司	15/06/2000
600235	民丰特种纸股份有限公司	15/06/2000
600248	陕西延长石油化建股份有限公司	22/06/2000
600240	北京华业地产股份有限公司	28/06/2000
600262	内蒙古北方重型汽车股份有限公司	30/06/2000
600300	徐州维维食品饮料股份有限公司	30/06/2000
600130	宁波波导股份有限公司	6/07/2000
600260	湖北凯乐科技股份有限公司	6/07/2000
600278	东方国际创业股份有限公司	12/07/2000
600301	南宁化工股份有限公司	12/07/2000
600296	兰州铝业股份有限公司	19/07/2000
600261	浙江阳光集团股份有限公司	20/07/2000
600289	亿阳信通股份有限公司	20/07/2000
600263	路桥集团国际建设股份有限公司	25/07/2000
600267	浙江海正药业股份有限公司	25/07/2000
600277	内蒙古亿利能源股份有限公司	25/07/2000
600279	重庆港九股份有限公司	31/07/2000
600291	内蒙古西水创业股份有限公司	31/07/2000
600275	湖北武昌鱼股份有限公司	10/08/2000
600298	安琪酵母股份有限公司	18/08/2000
600265	云南景谷林业股份有限公司	25/08/2000
600287	江苏舜天股份有限公司	1/09/2000
600282	南京钢铁股份有限公司	19/09/2000
600293	湖北三峡新型建材股份有限公司	19/09/2000
600246	北京万通地产股份有限公司	22/09/2000

600358	国旅联合股份有限公司	22/09/2000
600280	南京中央商场股份有限公司	26/09/2000
600308	山东华泰纸业股份有限公司	28/09/2000
600276	江苏恒瑞医药股份有限公司	18/10/2000
600283	钱江水利开发股份有限公司	18/10/2000
600285	河南羚锐制药股份有限公司	18/10/2000
600295	内蒙古鄂尔多斯羊绒制品股份有限公司	20/10/2000
600366	宁波韵升（集团）股份有限公司	30/10/2000
600292	重庆九龙电力股份有限公司	1/11/2000
600290	华仪电气股份有限公司	6/11/2000
600281	太原化工股份有限公司	9/11/2000
600297	美罗药业股份有限公司	16/11/2000
600243	青海华鼎实业股份有限公司	20/11/2000
600255	安徽鑫科新材料股份有限公司	22/11/2000
600247	吉林成城集团股份有限公司	23/11/2000
600337	美克国际家具股份有限公司	27/11/2000
600241	辽宁时代万恒股份有限公司	28/11/2000
600288	大恒新纪元科技股份有限公司	29/11/2000
600252	广西梧州中恒集团股份有限公司	30/11/2000
600422	昆明制药股份有限公司	6/12/2000
600242	中昌海运股份有限公司	7/12/2000
600318	安徽巢东水泥股份有限公司	8/12/2000
600333	长春燃气股份有限公司	11/12/2000
600019	宝山钢铁股份有限公司	12/12/2000
600302	西安标准工业股份有限公司	13/12/2000
600316	江西洪都航空工业股份有限公司	15/12/2000
600038	哈飞航空工业股份有限公司	18/12/2000
600016	中国民生银行股份有限公司	19/12/2000
600388	福建龙净环保股份有限公司	19/12/2000
600307	甘肃酒钢集团宏兴钢铁股份有限公司	20/12/2000
600368	广西五洲交通股份有限公司	21/12/2000
600328	内蒙古兰太实业股份有限公司	22/12/2000
600345	武汉长江通信产业集团股份有限公司	22/12/2000
600323	南海发展股份有限公司	25/12/2000
600339	新疆独山子天利高新技术股份有限公司	25/12/2000
600303	辽宁曙光汽车集团股份有限公司	26/12/2000
600306	沈阳商业城股份有限公司	26/12/2000
600253	河南天方药业股份有限公司	27/12/2000
600338	西藏珠峰工业股份有限公司	27/12/2000
600270	中外运空运发展股份有限公司	28/12/2000
600398	凯诺科技股份有限公司	28/12/2000
600336	青岛澳柯玛股份有限公司	29/12/2000
600399	抚顺特殊钢股份有限公司	29/12/2000
600309	烟台万华聚氨酯股份有限公司	5/01/2001
600400	江苏红豆实业股份有限公司	8/01/2001
600369	西南证券股份有限公司	9/01/2001

600389	南通江山农药化工股份有限公司	10/01/2001
600378	四川天一科技股份有限公司	11/01/2001
600365	通化葡萄酒股份有限公司	15/01/2001
600390	金瑞新材料科技股份有限公司	15/01/2001
600326	西藏天路交通股份有限公司	16/01/2001
600377	江苏宁沪高速公路股份有限公司	16/01/2001
600330	天通控股股份有限公司	18/01/2001
600382	广东明珠集团股份有限公司	18/01/2001
600313	中垦农业资源开发股份有限公司	19/01/2001
600305	江苏恒顺醋业股份有限公司	6/02/2001
600332	广州药业股份有限公司	6/02/2001
600037	北京歌华有线电视网络股份有限公司	8/02/2001
600033	福建发展高速公路股份有限公司	9/02/2001
600466	四川迪康科技药业股份有限公司	12/02/2001
600386	北京巴士传媒股份有限公司	16/02/2001
600312	河南平高电气股份有限公司	21/02/2001
600558	四川大西洋焊接材料股份有限公司	27/02/2001
600310	广西桂东电力股份有限公司	28/02/2001
600550	保定天威保变电气股份有限公司	28/02/2001
600335	鼎盛天工工程机械股份有限公司	5/03/2001
600250	南京纺织品进出口股份有限公司	6/03/2001
600010	内蒙古包钢钢联股份有限公司	9/03/2001
600376	北京首都开发股份有限公司	12/03/2001
600315	上海家化联合股份有限公司	15/03/2001
600360	吉林华微电子股份有限公司	16/03/2001
600393	广州东华实业股份有限公司	19/03/2001
600518	康美药业股份有限公司	19/03/2001
600367	贵州红星发展股份有限公司	20/03/2001
600319	潍坊亚星化学股份有限公司	26/03/2001
600396	沈阳金山能源股份有限公司	28/03/2001
600363	江西联创光电科技股份有限公司	29/03/2001
600383	金地（集团）股份有限公司	12/04/2001
600356	牡丹江恒丰纸业股份有限公司	19/04/2001
600381	青海贤成矿业股份有限公司	8/05/2001
600568	中珠控股股份有限公司	18/05/2001
600588	用友软件股份有限公司	18/05/2001
600321	四川国栋建设股份有限公司	24/05/2001
600528	中铁二局股份有限公司	28/05/2001
600395	贵州盘江精煤股份有限公司	31/05/2001
600329	天津中新药业集团股份有限公司	6/06/2001
600380	健康元药业集团股份有限公司	8/06/2001
600589	广东榕泰实业股份有限公司	12/06/2001
600468	天津百利特精电气股份有限公司	15/06/2001
600501	南京航天晨光股份有限公司	15/06/2001
600488	天津天药药业股份有限公司	18/06/2001
600311	甘肃荣华实业（集团）股份有限公司	26/06/2001

600419	新疆天宏纸业股份有限公司	28/06/2001
600530	上海交大昂立股份有限公司	2/07/2001
600372	中航航空电子设备股份有限公司	6/07/2001
600385	山东金泰集团股份有限公司	23/07/2001
600320	上海振华重工（集团）股份有限公司	5/08/2001
600556	广西北生药业股份有限公司	7/08/2001
600028	中国石油化工股份有限公司	8/08/2001
600346	大连橡胶塑料机械股份有限公司	20/08/2001
600569	安阳钢铁股份有限公司	20/08/2001
600566	湖北洪城通用机械股份有限公司	22/08/2001
600498	烽火通信科技股份有限公司	23/08/2001
600418	安徽江淮汽车股份有限公司	24/08/2001
600539	太原狮头水泥股份有限公司	24/08/2001
600519	贵州茅台酒股份有限公司	27/08/2001
600599	熊猫烟花集团股份有限公司	28/08/2001
600508	上海大屯能源股份有限公司	29/08/2001
600448	华纺股份有限公司	3/09/2001
600596	浙江新安化工集团股份有限公司	6/09/2001
600322	天津市房地产发展（集团）股份有限公司	10/09/2001
600361	北京华联综合超市股份有限公司	29/11/2001
600011	华能国际电力股份有限公司	6/12/2001
600391	四川成发航空科技股份有限公司	12/12/2001
600567	安徽山鹰纸业股份有限公司	18/12/2001
600331	四川宏达股份有限公司	20/12/2001
600548	深圳高速公路股份有限公司	25/12/2001
600506	新疆库尔勒香梨股份有限公司	26/12/2001
600523	贵州贵航汽车零部件股份有限公司	27/12/2001
600520	铜陵三佳科技股份有限公司	8/01/2002
600362	江西铜业股份有限公司	11/01/2002
600379	陕西宝光真空电器股份有限公司	16/01/2002
600555	上海九龙山股份有限公司	18/01/2002
600317	营口港务股份有限公司	31/01/2002
600583	海洋石油工程股份有限公司	5/02/2002
600585	安徽海螺水泥股份有限公司	7/02/2002
600509	新疆天富热电股份有限公司	28/02/2002
600373	江西鑫新实业股份有限公司	4/03/2002
600350	山东高速公路股份有限公司	18/03/2002
600533	南京栖霞建设股份有限公司	28/03/2002
600598	黑龙江北大荒农业股份有限公司	29/03/2002
600036	招商银行股份有限公司	9/04/2002
600456	宝鸡钛业股份有限公司	12/04/2002
600428	中远航运股份有限公司	18/04/2002
600486	江苏扬农化工股份有限公司	25/04/2002
600415	浙江中国小商品城集团股份有限公司	9/05/2002
600578	北京京能热电股份有限公司	10/05/2002
600582	天地科技股份有限公司	15/05/2002

600536	中国软件与技术服务股份有限公司	17/05/2002
600026	中海发展股份有限公司	23/05/2002
600505	四川西昌电力股份有限公司	30/05/2002
600529	山东省药用玻璃股份有限公司	3/06/2002
600496	长江精工钢结构（集团）股份有限公司	5/06/2002
600580	卧龙电气集团股份有限公司	6/06/2002
600355	精伦电子股份有限公司	13/06/2002
600510	黑牡丹（集团）股份有限公司	18/06/2002
600426	山东华鲁恒升化工股份有限公司	20/06/2002
600327	无锡商业大厦大东方股份有限公司	25/06/2002
600595	河南中孚实业股份有限公司	26/06/2002
600397	安源实业股份有限公司	2/07/2002
600590	泰豪科技股份有限公司	3/07/2002
600503	华丽家族股份有限公司	9/07/2002
600593	大连圣亚旅游控股股份有限公司	11/07/2002
600561	江西长运股份有限公司	16/07/2002
600416	湘潭电机股份有限公司	18/07/2002
600526	浙江菲达环保科技股份有限公司	22/07/2002
600565	重庆市迪马实业股份有限公司	23/07/2002
600531	河南豫光金铅股份有限公司	30/07/2002
600592	福建龙溪轴承（集团）股份有限公司	5/08/2002
600515	海南筑信投资股份有限公司	6/08/2002
600579	青岛黄海橡胶股份有限公司	9/08/2002
600586	山东金晶科技股份有限公司	15/08/2002
600581	新疆八一钢铁股份有限公司	16/08/2002
600553	河北太行水泥股份有限公司	22/08/2002
600535	天津天士力制药股份有限公司	23/08/2002
600597	光明乳业股份有限公司	28/08/2002
600516	方大炭素新材料科技股份有限公司	30/08/2002
600551	时代出版传媒股份有限公司	5/09/2002
600357	承德新新钒钛股份有限公司	6/09/2002
600577	铜陵精达特种电磁线股份有限公司	11/09/2002
600587	山东新华医疗器械股份有限公司	12/09/2002
600371	万向德农股份有限公司	16/09/2002
600557	江苏康缘药业股份有限公司	18/09/2002
600560	北京金自天正智能控制股份有限公司	19/09/2002
600351	亚宝药业集团股份有限公司	26/09/2002
600050	中国联合网络通信股份有限公司	9/10/2002
600499	广东科达机电股份有限公司	10/10/2002
600591	上海航空股份有限公司	11/10/2002
600522	江苏中天科技股份有限公司	24/10/2002
600559	河北衡水老白干酒业股份有限公司	29/10/2002
600532	山东华阳科技股份有限公司	31/10/2002
600571	杭州信雅达系统工程股份有限公司	1/11/2002
600549	厦门钨业股份有限公司	7/11/2002
600552	安徽方兴科技股份有限公司	8/11/2002

600353	成都旭光电子股份有限公司	20/11/2002
600511	国药集团药业股份有限公司	27/11/2002
600525	长园集团股份有限公司	2/12/2002
600563	厦门法拉电子股份有限公司	10/12/2002
600458	株洲时代新材料科技股份有限公司	19/12/2002
600512	腾达建设集团股份有限公司	26/12/2002
600030	中信证券股份有限公司	6/01/2003
600012	安徽皖通高速公路股份有限公司	7/01/2003
600272	上海开开实业股份有限公司	8/01/2003
600538	北海国发海洋生物产业股份有限公司	14/01/2003
600537	海通食品集团股份有限公司	23/01/2003
600562	江苏高淳陶瓷股份有限公司	28/01/2003
600408	山西安泰集团股份有限公司	12/02/2003
600576	浙江万好万家实业股份有限公司	20/02/2003
600573	福建省惠泉啤酒集团股份有限公司	26/02/2003
600521	浙江华海药业股份有限公司	4/03/2003
600370	江苏三房巷实业股份有限公司	6/03/2003
600460	杭州士兰微电子股份有限公司	11/03/2003
600513	江苏联环药业股份有限公司	19/03/2003
600039	四川路桥建设股份有限公司	25/03/2003
600575	芜湖港储运股份有限公司	28/03/2003
600375	安徽星马汽车股份有限公司	1/04/2003
600343	陕西航天动力高科技股份有限公司	8/04/2003
600502	安徽水利开发股份有限公司	15/04/2003
600481	江苏双良空调设备股份有限公司	22/04/2003
600004	广州白云国际机场股份有限公司	28/04/2003
600459	贵研铂业股份有限公司	16/05/2003
600392	太原理工天成科技股份有限公司	29/05/2003
600584	江苏长电科技股份有限公司	3/06/2003
600251	新疆冠农果茸集团股份有限公司	9/06/2003
600436	漳州片仔癀药业股份有限公司	16/06/2003
600409	唐山三友化工股份有限公司	18/06/2003
600433	广东冠豪高新技术股份有限公司	19/06/2003
600490	上海中科合臣股份有限公司	26/06/2003
600273	华芳纺织股份有限公司	27/06/2003
600031	三一重工股份有限公司	3/07/2003
600435	中兵光电科技股份有限公司	4/07/2003
600439	河南瑞贝卡发制品股份有限公司	10/07/2003
600271	航天信息股份有限公司	11/07/2003
600423	柳州化工股份有限公司	17/07/2003
600475	无锡华光锅炉股份有限公司	21/07/2003
600425	新疆青松建材化工(集团)股份有限公司	24/07/2003
600029	中国南方航空股份有限公司	25/07/2003
600546	山煤国际能源集团股份有限公司	31/07/2003
600352	浙江龙盛集团股份有限公司	1/08/2003
600485	北京中创信测科技股份有限公司	7/08/2003

600020	河南中原高速公路股份有限公司	8/08/2003
600489	中金黄金股份有限公司	14/08/2003
600480	凌云工业股份有限公司	15/08/2003
600348	山西国阳新能股份有限公司	21/08/2003
600487	江苏亨通光电股份有限公司	22/08/2003
600547	山东黄金矿业股份有限公司	28/08/2003
600449	宁夏赛马实业股份有限公司	29/08/2003
600462	延边石岘白麓纸业股份有限公司	3/09/2003
600432	吉林吉恩镍业股份有限公司	5/09/2003
600015	华夏银行股份有限公司	12/09/2003
600429	北京三元食品股份有限公司	15/09/2003
600478	湖南科力远新能源股份有限公司	18/09/2003
600401	江苏申龙高科集团股份有限公司	24/09/2003
600507	方大特钢科技股份有限公司	30/09/2003
600403	南京欣网视讯科技股份有限公司	9/10/2003
600517	上海置信电气股份有限公司	10/10/2003
600406	国电南瑞科技股份有限公司	16/10/2003
600469	风神轮胎股份有限公司	21/10/2003
600021	上海电力股份有限公司	29/10/2003
600184	湖北新华光信息材料股份有限公司	6/11/2003
600477	浙江杭萧钢构股份有限公司	10/11/2003
600900	中国长江电力股份有限公司	18/11/2003
600527	江苏江南高纤股份有限公司	27/11/2003
600545	新疆城建（集团）股份有限公司	3/12/2003
600476	湖南湘邮科技股份有限公司	10/12/2003
600570	恒生电子股份有限公司	16/12/2003
600446	深圳市金证科技股份有限公司	24/12/2003
600340	浙江国祥制冷工业股份有限公司	30/12/2003
600540	新疆赛里木现代农业股份有限公司	7/01/2004
600354	甘肃省敦煌种业股份有限公司	15/01/2004
600249	柳州两面针股份有限公司	30/01/2004
600387	浙江海越股份有限公司	18/02/2004
600444	安徽国通高新管业股份有限公司	19/02/2004
600325	珠海华发实业股份有限公司	25/02/2004
600438	通威股份有限公司	2/03/2004
600452	重庆涪陵电力实业股份有限公司	3/03/2004
600470	安徽六国化工股份有限公司	5/03/2004
600035	湖北楚天高速公路股份有限公司	10/03/2004
600479	株洲千金药业股份有限公司	12/03/2004
600284	上海浦东路桥建设股份有限公司	16/03/2004
600463	北京空港科技园区股份有限公司	18/03/2004
600594	贵州益佰制药股份有限公司	23/03/2004
600543	甘肃莫高实业发展股份有限公司	24/03/2004
600455	西安交大博通资讯股份有限公司	29/03/2004
600405	北京动力源科技股份有限公司	1/04/2004
600467	山东好当家海洋发展股份有限公司	5/04/2004

600960	山东滨州渤海活塞股份有限公司	7/04/2004
600969	湖南郴电国际发展股份有限公司	8/04/2004
600572	浙江康恩贝制药股份有限公司	12/04/2004
600988	广州东方宝龙汽车工业股份有限公司	14/04/2004
600976	武汉健民药业集团股份有限公司	19/04/2004
600497	云南驰宏锌锗股份有限公司	20/04/2004
600493	福建凤竹纺织科技股份有限公司	21/04/2004
600986	科达集团股份有限公司	26/04/2004
600410	北京华胜天成科技股份有限公司	27/04/2004
600985	安徽雷鸣科化股份有限公司	28/04/2004
600990	安徽四创电子股份有限公司	10/05/2004
600114	宁波东睦新材料集团股份有限公司	11/05/2004
600980	北矿磁材科技股份有限公司	12/05/2004
600992	贵州钢绳股份有限公司	14/05/2004
600993	马应龙药业集团股份有限公司	17/05/2004
600967	包头北方创业股份有限公司	18/05/2004
600491	龙元建设集团股份有限公司	24/05/2004
600963	岳阳纸业股份有限公司	25/05/2004
600495	晋西车轴股份有限公司	26/05/2004
600483	福建南纺股份有限公司	31/05/2004
600461	江西洪城水业股份有限公司	1/06/2004
600997	开滦能源化工股份有限公司	2/06/2004
600421	武汉国药科技股份有限公司	7/06/2004
600966	山东博汇纸业股份有限公司	8/06/2004
600975	湖南新五丰股份有限公司	9/06/2004
600991	广汽长丰汽车股份有限公司	14/06/2004
600995	云南文山电力股份有限公司	15/06/2004
600420	上海现代制药股份有限公司	16/06/2004
600962	国投中鲁果汁股份有限公司	22/06/2004
600143	金发科技股份有限公司	23/06/2004
600022	济南钢铁股份有限公司	29/06/2004
600981	江苏开元股份有限公司	30/06/2004
600982	宁波热电股份有限公司	6/07/2004
600984	陕西建设机械股份有限公司	7/07/2004
600965	河北福成五丰食品股份有限公司	13/07/2004
600482	风帆股份有限公司	14/07/2004
600983	合肥荣事达三洋电器股份有限公司	27/07/2004
600973	宝胜科技创新股份有限公司	2/08/2004
600987	浙江航民股份有限公司	9/08/2004
600971	安徽恒源煤电股份有限公司	17/08/2004
600978	广东省宜华木业股份有限公司	24/08/2004
600961	株洲冶炼集团股份有限公司	30/08/2004
600979	四川广安爱众股份有限公司	6/09/2004

Table 12.8 IPOs Listed in SZSE

Code	IPOs	Listing Date
000877	新疆天山水泥股份有限公司	7/01/1999
000892	星美联合股份有限公司	15/01/1999
000890	江苏法尔胜股份有限公司	19/01/1999
000900	现代投资股份有限公司	28/01/1999
000908	湖南天一科技股份有限公司	3/02/1999
000928	中钢集团吉林炭素股份有限公司	12/03/1999
000885	河南同力水泥股份有限公司	19/03/1999
000917	湖南电广传媒股份有限公司	25/03/1999
000901	航天科技控股集团股份有限公司	1/04/1999
000902	中国服装股份有限公司	8/04/1999
000903	昆明云内动力股份有限公司	15/04/1999
000897	天津津滨发展股份有限公司	22/04/1999
000905	厦门港务发展股份有限公司	29/04/1999
000909	数源科技股份有限公司	7/05/1999
000913	浙江钱江摩托股份有限公司	14/05/1999
000911	南宁糖业股份有限公司	27/05/1999
000912	四川泸天化股份有限公司	3/06/1999
000915	山东山大华特科技股份有限公司	9/06/1999
000925	浙江众合机电股份有限公司	11/06/1999
000920	南方汇通股份有限公司	16/06/1999
000922	阿城继电器股份有限公司	18/06/1999
000926	湖北福星科技股份有限公司	18/06/1999
000929	兰州黄河企业股份有限公司	23/06/1999
000835	四川圣达实业股份有限公司	25/06/1999
000910	大亚科技股份有限公司	30/06/1999
000906	南方建材股份有限公司	7/07/1999
000930	安徽丰原生物化学股份有限公司	12/07/1999
000931	北京中关村科技发展(控股)股份有限公司	12/07/1999
000921	海信科龙电器股份有限公司	13/07/1999
000923	河北宣化工程机械股份有限公司	14/07/1999
000918	嘉凯城集团股份有限公司	20/07/1999
000090	深圳市天健（集团）股份有限公司	21/07/1999
000927	天津一汽夏利汽车股份有限公司	27/07/1999
000932	湖南华菱钢铁股份有限公司	3/08/1999
000936	江苏华西村股份有限公司	10/08/1999
000935	四川双马水泥股份有限公司	24/08/1999
000933	河南神火煤电股份有限公司	31/08/1999
000937	冀中能源股份有限公司	9/09/1999
000950	重庆建峰化工股份有限公司	16/09/1999
000939	武汉凯迪电力股份有限公司	23/09/1999
000916	华北高速公路股份有限公司	27/09/1999
000948	云南南天电子信息产业股份有限公司	14/10/1999
000949	新乡化纤股份有限公司	21/10/1999
000938	紫光股份有限公司	4/11/1999

000956	中国石化中原油气高新股份有限公司	10/11/1999
000952	湖北广济药业股份有限公司	12/11/1999
000919	金陵药业股份有限公司	18/11/1999
000951	中国重汽集团济南卡车股份有限公司	25/11/1999
000953	广西河池化工股份有限公司	2/12/1999
000955	欣龙控股（集团）股份有限公司	9/12/1999
000959	北京首钢股份有限公司	16/12/1999
000958	石家庄东方热电股份有限公司	23/12/1999
000957	中通客车控股股份有限公司	13/01/2000
000962	宁夏东方钽业股份有限公司	20/01/2000
000963	华东医药股份有限公司	27/01/2000
000960	云南锡业股份有限公司	21/02/2000
000961	江苏中南建设集团股份有限公司	1/03/2000
000999	华润三九医药股份有限公司	9/03/2000
000966	国电长源电力股份有限公司	16/03/2000
000967	浙江上风实业股份有限公司	30/03/2000
000965	天津天保基建股份有限公司	6/04/2000
000970	北京中科三环高技术股份有限公司	20/04/2000
000971	湖北迈亚股份有限公司	27/04/2000
000070	深圳市特发信息股份有限公司	11/05/2000
000978	桂林旅游股份有限公司	18/05/2000
000973	佛山塑料集团股份有限公司	25/05/2000
000301	江苏吴江中国东方丝绸市场股份有限公司	29/05/2000
000969	安泰科技股份有限公司	29/05/2000
000976	广东开平春晖股份有限公司	1/06/2000
000975	南方科学城发展股份有限公司	8/06/2000
000977	浪潮电子信息产业股份有限公司	8/06/2000
000988	华工科技产业股份有限公司	8/06/2000
000979	中弘地产股份有限公司	16/06/2000
000980	黄山金马股份有限公司	16/06/2000
000968	太原煤气化股份有限公司	22/06/2000
000981	甘肃兰光科技股份有限公司	22/06/2000
000989	九芝堂股份有限公司	28/06/2000
000982	宁夏中银绒业股份有限公司	6/07/2000
000990	诚志股份有限公司	6/07/2000
000987	广州友谊集团股份有限公司	18/07/2000
000996	中国中期投资股份有限公司	18/07/2000
000096	深圳市广聚能源股份有限公司	24/07/2000
000158	石家庄常山纺织股份有限公司	24/07/2000
000983	山西西山煤电股份有限公司	26/07/2000
000985	大庆华科股份有限公司	26/07/2000
000099	中信海洋直升机股份有限公司	31/07/2000
000993	福建闽东电力股份有限公司	31/07/2000
000150	宜华地产股份有限公司	7/08/2000
000995	甘肃皇台酒业股份有限公司	7/08/2000
000997	福建新大陆电脑股份有限公司	7/08/2000

000151	中成进出口股份有限公司	6/09/2000
000156	湖南嘉瑞新材料集团股份有限公司	6/09/2000
000153	安徽丰原药业股份有限公司	20/09/2000
000155	川化股份有限公司	26/09/2000
000159	新疆国际实业股份有限公司	26/09/2000
000972	新疆中基实业股份有限公司	26/09/2000
000157	长沙中联重工科技发展股份有限公司	12/10/2000
000869	烟台张裕葡萄酿酒股份有限公司	26/10/2000
000488	山东晨鸣纸业集团股份有限公司	20/11/2000
000998	袁隆平农业高科技股份有限公司	11/12/2000
000726	鲁泰纺织股份有限公司	25/12/2000
000725	京东方科技集团股份有限公司	12/01/2001
000875	吉林电力股份有限公司	26/09/2002
000100	TCL 集团股份有限公司	30/01/2004
002001	浙江新和成股份有限公司	25/06/2004
002002	江苏琼花高科技股份有限公司	25/06/2004
002003	浙江伟星实业发展股份有限公司	25/06/2004
002004	重庆华邦制药股份有限公司	25/06/2004
002005	广东德豪润达电气股份有限公司	25/06/2004
002006	浙江精功科技股份有限公司	25/06/2004
002007	华兰生物工程股份有限公司	25/06/2004
002008	深圳市大族激光科技股份有限公司	25/06/2004
002009	江苏天奇物流系统工程股份有限公司	29/06/2004
002010	浙江传化股份有限公司	29/06/2004
002011	浙江盾安人工环境设备股份有限公司	5/07/2004
002012	浙江凯恩特种材料股份有限公司	5/07/2004
002013	湖北中航精机科技股份有限公司	5/07/2004
002014	黄山永新股份有限公司	8/07/2004
002015	江苏霞客环保色纺股份有限公司	8/07/2004
002016	广东世荣兆业股份有限公司	8/07/2004
002017	东信和平智能卡股份有限公司	13/07/2004
002018	安徽华星化工股份有限公司	13/07/2004
002019	浙江杭州鑫富药业股份有限公司	13/07/2004
002020	浙江京新药业股份有限公司	15/07/2004
002021	中捷缝纫机股份有限公司	15/07/2004
002022	上海科华生物工程股份有限公司	21/07/2004
002023	四川海特高新技术股份有限公司	21/07/2004
002024	苏宁电器股份有限公司	21/07/2004
002025	贵州航天电器股份有限公司	26/07/2004
002026	山东威达机械股份有限公司	27/07/2004
002027	七喜控股股份有限公司	4/08/2004
002028	思源电气股份有限公司	5/08/2004
002029	福建七匹狼实业股份有限公司	6/08/2004
002030	中山大学达安基因股份有限公司	9/08/2004
002031	广东巨轮模具股份有限公司	16/08/2004
002032	浙江苏泊尔炊具股份有限公司	17/08/2004

002033	丽江玉龙旅游股份有限公司	25/08/2004
002034	浙江美欣达印染集团股份有限公司	26/08/2004
002035	中山华帝燃具股份有限公司	1/09/2004
002036	宁波宜科科技实业股份有限公司	3/09/2004
002037	贵州久联民爆器材发展股份有限公司	8/09/2004
002038	北京双鹭药业股份有限公司	9/09/2004

Source: Shenzhen Stock Exchange www.szse.cn

Table 12.9 IPOs Listed in NZSE

Code	IPOs	Listing Date
AMP	AMP Ltd	15/06/1998
SVN	Sovereign Ltd	1/07/1998
AIA	Auckland International Airport Ltd	28/07/1998
CNZ	Capital Properties New Zealand Ltd	1/12/1998
NWL	Nobilo Wines Ltd	18/12/1998
GRD	Gold & Resource Developments NL	31/12/1998
CEN	Contact Energy Ltd	11/05/1999
GMT	Colonial First State Property Trust	3/06/1999
RYM	Ryman Healthcare Ltd	29/06/1999
CHP	Calan Healthcare Properties Trust	7/09/1999
TWR	Tower Ltd	28/09/1999
WPT	WestpacTrust Investments Ltd	12/10/1999
NML	National Mail New Zealand Ltd	23/03/2000
LPL	Beauty Direct & Online Ltd	29/03/2000
TRS	E-cademy Holdings Ltd	18/04/2000
GDC	GDC Communications Ltd	26/04/2000
MOW	Mowbray Collectables Ltd	26/04/2000
EVZ	eVentures New Zealand Ltd	9/05/2000
NEW	E-Opportunity Ltd	10/05/2000
FRU	Frucor Beverages Group Ltd	13/06/2000
WID	NZIJ.co.nz Ltd	26/06/2000
CYT	Rocom Wireless Ltd	17/08/2000
PLS	RetailX Ltd	1/09/2000
GEN	Genesis Research & Development Corp Ltd	22/09/2000
VTL	Vending Technologies Ltd	1/11/2000
SUB	Submarines Australasia Ltd	8/11/2000
CTL	Cadmus Technology Ltd	17/11/2000
CTG	Cabletalk Group Ltd	22/11/2000
CGL	The CACI Group Ltd	28/11/2000
CCG	Compass Communications Group Ltd	29/11/2000
PWC	Powerco Ltd	4/12/2000
SOE	Software of Excellence International Ltd	15/12/2000
FIN	Finzsoft Solutions Ltd	19/12/2000
CCC	Mooring Systems Ltd	20/12/2000
BIO	Australasian Property Holdings Ltd	21/12/2000
RHD	Richmond Ltd	13/02/2001
WDT	Wellington Drive Technologies Ltd	28/02/2001
RBC	Rubicon Ltd	23/03/2001
KRK	Kirkcaldie & Stains Ltd	14/05/2001
BLT	BLIS Technologies Ltd	30/07/2001
WFD	Wakefield Hospital Ltd	6/09/2001
FPA	Fisher & Paykel Appliances Holdings Ltd	12/11/2001

KID	Feverpitch International Ltd	14/12/2001
BGR	Briscoe Group Ltd	14/12/2001
VEA	Data Advantage Ltd	17/12/2001
PPP	Pan Pacific Petroleum NL	14/01/2002
SRE	Straightedge Ltd	22/04/2002
ALF	Allied Farmers Ltd	9/05/2002
SKL	Skellmax Industries Ltd	19/06/2002
VTX	Vertex Group Holdings Ltd	1/07/2002
TUA	Turners Auctions Ltd	4/10/2002
AMK	AMP Reset Preferred Securities	29/10/2002
DOW	Downer EDI Ltd	6/11/2002
BOZ	Botry-Zen Ltd	20/11/2002
ING	Paramount Property Trust	4/12/2002
ASB	ASB Capital Ltd	11/12/2002
GEM	Global Market Equity Securities Ltd	23/12/2002
PEB	Pacific Edge Biotechnology Ltd	12/02/2003
PMN	Promina Group Ltd	12/05/2003
NZX	New Zealand Exchange Ltd	4/06/2003
URB	Urbus Properties Ltd	21/07/2003
UTC	Utilico Investment Trust plc	15/08/2003
PPG	Postie Plus Group Ltd	2/09/2003
FRE	Freightways Ltd	29/09/2003
FTB	42 Below Ltd	15/10/2003
SCY	Smiths City Group Ltd	14/11/2003
SEK	Seeka Kiwifruit Industries Ltd	14/11/2003
NWC	The New Zealand Wine Company Ltd	14/11/2003
OBV	Oyster Bay Marlborough Vineyards Ltd	14/11/2003
LBS	Loan & Building Society	14/11/2003
CVT	Comvita Ltd	14/11/2003
ZIN	Zintel Communications Ltd	14/11/2003
RCL	Repco Corporation Ltd	20/11/2003
WEL	Wool Equities Ltd	20/11/2003
WTL	Windflow Technology Ltd	2/12/2003
APX	Austral Pacific Energy Ltd	6/01/2004
OGD	Oceana Gold Ltd	18/03/2004
PGC	Pyne Gould Corporation Ltd	30/03/2004
KFL	Kingfish Ltd	31/03/2004
PBG	Pacific Brands Ltd	2/04/2004
IIN	iiNet Ltd	19/04/2004
LIC	Livestock Improvement Corporation Ltd	19/04/2004
ATM	A2 Corporation Ltd	21/04/2004
WSI	New Zealand Wool Services International Ltd	3/05/2004
TTK	TeamTalk Ltd	6/05/2004
MPM	Mike Pero Mortgages Ltd	24/05/2004

FTX	Feltex Carpets Ltd	4/06/2004
PPL	Pumpkin Patch Ltd	9/06/2004
JWI	Just Water International Ltd	15/06/2004
APN	APN News & Media Ltd	21/06/2004
SAM	Salvus Strategic Investments Ltd	8/07/2004
CBS	Ashburton Building Society	
DFH	Dominion Finance Holdings Ltd	14/07/2004
SDL	Solution Dynamics Ltd	27/07/2004
MWL	CanWest MediaWorks (NZ) Ltd	29/07/2004
SGL	Speirs Group Ltd	17/08/2004
BBI (PIF)	Prime Infrastructure	13/09/2004
MZY	The NZX Australian MidCap Index Fund	27/09/2004
ARM	Aurora Minerals Ltd	28/09/2004
TUR	Turners & Growers Ltd	29/09/2004
STH	Southern Travel Holdings Ltd	1/10/2004
NZF	New Zealand Finance Holdings Ltd	6/10/2004
CDN	Caledonia Investments PLC	1/11/2004
CNX	Connexionz Ltd	19/11/2004
MVN	Methven Ltd	30/11/2004
PEO	People Telecom Ltd	3/12/2004
FNZ	NZSX 50 Portfolio Index Fund	10/12/2004
SAT	Satara Co-operative Group	13/12/2004
GLS	Gullivers Travel Group Ltd	15/12/2004
EHF	Eastern Hi Fi Group Ltd	15/12/2004
SLT(DEI)	Deutsche Equity Income Trust plc	24/12/2004

Source: New Zealand Stock Exchange www.nzx.com