The Effect of Share Issue Privatisation (or Initial Public Offering) on Firm Performance in China

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Abstract

This thesis examines the effect of partial share issue privatisation (or Initial Public Offering – IPO) on financial performance of Chinese state-owned enterprises (SOEs hereafter). Theoretically, studies of privatisation suggest that private firms perform better than comparable SOEs do, or privatisation improves financial performance of SOEs privatised through public share offering, and full privatisation has been widely advocated. Prior to going public, Chinese SOEs stand at very different starting points compared to their counterparts in the West in that sound corporate management systems, corporate governance mechanisms and an efficient capital market are either not in place or underdeveloped. As a result of going public, new corporate management styles and corporate governance mechanisms are introduced into newly privatised firms. Therefore the performance of Chinese SOEs after IPO might not be merely the result of privatisation or ownership change as elsewhere, but also be the result of effect of IPO on corporate management and corporate governance.

There are several empirical and conceptual gaps in understanding Chinese SOEs' financial performance after going public. Firstly, the results of performance changes of an early study on Chinese share issue privatisation may not be accurate due to poor data quality before the introduction of the new accounting regulation based on International Accounting Standards. Secondly, there is a need to clarify the causes of firms' performance changes between three years post-privatisation (or post-IPO) and three years pre-privatisation (or pre-IPO) periods. Finally, there is a need to investigate the effect of IPO on corporate management and corporate governance practice that may contribute directly towards firms' financial performance after going public in the Chinese context.

A methodology developed by Megginson et al (1994) in their study of global share issue privatisation through comparing firms' post-privatisation versus

pre-privatisation performance proxies is employed in this thesis. Empirical research includes examination of accounting data over 6 years (3 years post-IPO versus 3 years pre-IPO) of 127 firms going public in 1997 and 1998 at the Shanghai Stock Exchange; three years post-IPO share price return of the above firms; one survey of 238 listed firms and 16 case studies of listed firms.

Findings show that in terms of accounting performance, firms experience significant performance deterioration in profitability and efficiency, but significant reduction in leverage and improvement in liquidity and output after going public. The fact that deterioration of all profitability and efficiency performance measures may indicate that share issue privatisation or IPO has not worked properly to improve firm performance, and financial market is weak in monitoring firms since share price return reflects real sales and short-term liquidity instead of profitability measures. Further findings show that key determinants in firms' performance changes are pronounced by private ownership, the presence of employee ownership, share issue size, board size and asset size of the firms. Evidence from 16 listed firms confirms that key factors in firms' financial performance changes include not only ownership change, but also poor corporate management and corporate governance practice. After going public, firms' poor strategic, financial and human resource management is accompanied by poor corporate governance and legal enforcement mechanisms. The results suggest that IPO cannot be expected to solve all aspects of corporate issues, and it may be difficult to achieve performance improvement if corporate infrastructures have not been well developed in the first place. Furthermore, current Chinese corporate governance mechanisms are insufficient and inefficient to monitor firms, and this thesis recommends reforming legal systems, building sound corporate governance mechanisms and promoting institutional investors through various proposed means (e.g. setting up tribunals, introducing strategic foreign investors and specifying governance mechanisms etc.) are prerequisites to performance improvement after privatisation.

Declaration

This thesis contains no material that has been accepted for the award of any other degree or diploma in any university.

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

Signature:

Date: 28th Oct 2003

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Abbreviations

AMC	Asset Management Company
CEO	Chief Executive Officer
CFO	Chief Financial Officer
COO	Chief Operating Officer
CSRC	China Securities Regulatory Commission
HKEx	Hong Kong Exchange
IAS	International Accounting Standards
IFC	International Finance Corporation
IPO	Initial Public Offering
LSE	London Stock Exchange
NYSE	New York Stock Exchange
NASDAQ	National Association of Securities Dealers' Automated Quotation
SES	Stock Exchange of Singapore
SIP	Share Issue Privatisation
SOE	State Owned Enterprise
SSE	Shanghai Stock Exchange

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Chapter 1   Introduction

As economic policies, privatisation and nationalisation have been widely debated. This thesis focuses on privatisation of profit-organisations; privatisation of non-profit organisations and nationalisation of public sector are not within the scope of this thesis. Specifically, the effect of share issue privatisation (or initial public offering – IPO hereafter) on firms' financial and operating performance is the main focus, and the effect of IPO on capital market is not investigated in this thesis.

1.1   Privatisation & Firm Performance

Privatisation is a highly political and economic process. A privatisation is a sale of state-owned enterprises (SOEs hereafter) to private investors and the basic goal of the privatisation is to promote efficiency and profitability of former SOEs. In developed countries, privatisation methods are mainly asset sales and share issue privatisation by government in which SOEs are sold to investors through a public share offering. In the last two decades, share issue privatisation has been one of the most important elements of the continuing global phenomenon of the increasing use of financial markets to allocate resources. China has been using share issue privatisation as its major privatisation strategy, and this thesis mainly investigates the effect of share issue privatisation or initial public offering (IPO) on firm performance in China.

Studies of privatisation suggest that in theory private firms perform better than comparable SOEs do, or privatisation improves financial performance of SOEs privatised through public share offering, and full privatisation has been widely advocated. Theoretically, privatisation is expected to improve operating and financial performance of newly privatised firms, and to promote more efficient use of resource and growth for firms and industries, as well as to increase the role of the private sector in the economy. For instance, the exposure to new competition in the product market, threat of bankruptcy and changes in firms' objectives from government goals to profit maximisation as public companies after privatisation should promote firms' profitability and efficiency. Empirically, the role of privatisation in improving firm performance has been well documented in both developed and developing countries.

Researchers have found privatisation improve firms' performance in profitability, efficiency, real output and leverage etc. Furthermore, firms in developed countries generate larger performance gains than do firms in developing countries. Generally, full privatisation instead of partial privatisation is widely advocated to improve firm performance.

1.2 Research Objectives

SOEs have been the dominant economic entities in China and modern organisation systems and corporate governance mechanisms have just been built up from scratch at the time of IPO. Therefore share issue privatisation (or IPO) is supposed to have impact on corporate management and corporate governance after IPO, and firm performance will change subsequently. In other words, corporate management and corporate governance might contribute to the financial and operating performance of newly privatised firms. The above arguments build the foundation for analysis of this thesis, and the effect of IPO on financial performance, and corporate management and corporate governance of newly privatised firms are examined accordingly. This thesis narrows the focus on post-IPO versus pre-IPO (namely post-privatisation versus pre-privatisation) performance changes and the determinants of these performance changes. In addition, it also examines the effect of IPO on corporate management and corporate governance so as to explain the performance changes after IPO.

Chinese SOEs stand at very different starting points compared to their counterparts in the West in that a sound corporate management systems, corporate governance mechanisms and an efficient capital markets are either not in place or underdeveloped. Therefore the performance of Chinese SOEs after going public might not be merely the result of privatisation or ownership change as elsewhere. There are several empirical and conceptual gaps in understanding Chinese SOEs' financial performance changes after going public and causes of these changes. Firstly, the results of firm performance of an early study of Chinese share issue privatisation may not be accurate due to poor data quality before the introduction of the new accounting regulations based on International Accounting Standards. Secondly, there is a need to clarify the causes of firms' post-IPO versus pre-IPO

performance changes. Finally, there is a need to investigate current corporate management and corporate governance practice that may contribute directly to firms' post-privatisation financial performance in the Chinese context.

1.3 Research Contributions

This thesis expects to contribute to privatisation study on China in the following three areas:

- The Effect of IPO on Performance in Newly Privatised Firms

This thesis examines the firms' performance changes after IPO. Due to different methodologies employed, privatisation studies on China document different results, in which most studies document improved financial performance in terms of both accounting performance and firms' market value, though one study documents some deteriorated performance after going public. This thesis analyses firms' performance changes based on a carefully-chosen MNR methodology[1] and more reliable data, and meanwhile identifies methodological problems which lead to controversial performance results of newly privatised firms in other studies on China. This thesis finds that all profitability and efficiency performance measures deteriorate after IPO, in which return on sales, return on assets, return on equity, sales to assets turnover decline after IPO, with significant improvement in liquidity and reduction in leverage. The results might suggest that share issue privatisation or IPO does not work properly to improve firm performance in China.

- The Determinants of Performance Changes

Further regression results suggest that the most important performance drivers are private ownership, the presence of employee ownership, share issue size, board size and asset size of the firms. It is found that state and legal person ownership do not have significant impact on firm performance, while private and employee ownership impose pressure on firms to improve profitability and output. Meanwhile private

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[1] Megginson, Nash and Van Randenborgh (1994) first employed MNR methodology in their international empirical analysis of performance of newly privatised firms. The comparisons are made between pre- and post-privatisation financial performance of the same group of firms and only one (matched) sample has to be selected.

shareholders favour less borrowing and employee shareholders encourage borrowing. As firms raise more funds through IPO, the potential for misuse of the funds is higher with a subsequent deterioration in performance, but share issue proceeds also help to pay back firms' debts. Larger board size help to improve firms' real sales, but also contribute to higher borrowing. Larger firms might realise economies of scale better than smaller firms might in improving profitability. In addition, through examining firms' post IPO market and accounting performance, it is also found that firms' share price returns only reflect real sales and short-term liquidity measures instead of profitability measures, which suggests that firms' market performance does not fully reflect their accounting performance.

- The Effect of IPO on Corporate Management & Corporate Governance

It is found that corporate management and corporate governance practice after IPO might contribute to firm performance. The effect of IPO on firm performance in China might includes other factors such as corporate management and corporate governance practices in explaining firms' performance changes after IPO, not just ownership changes. It is recognised that there is a possible causal relationship in which firm performance might also affect corporate governance as corporate governance does on firm performance. For Chinese listed firms, corporate governance mechanisms are introduced into the newly privatised firms at the time of IPO, hence the corporate governance tends to have impact on firm performance, not the other way around. Corporate governance practice in newly privatised firms in China has never been studied through case study before. In fact the available arguments about current corporate governance are not based on firm-level research evidence, but common assumption of the disadvantages of state ownership in transition economies. This thesis investigates the current corporate management and corporate governance practices in newly privatised firms through case studies of 16 listed firms. It tries to identify the role of corporate management and corporate governance in firms' performance changes after IPO. The evidence further suggests that firms experience various changes in corporate management and corporate governance practice, in which the poor strategic, financial and human resource management are accompanied by weak legal, internal and external governance

mechanisms. Therefore the evidence confirms the earlier findings that firms perform worse after IPO and corporate management and corporate governance also contribute to that. The insights regarding the effect of IPO (partial share issue privatisation) should provide valuable guidance to government officials, domestic and foreign investors, SOE managers and financial economists or researchers.

1.4 Structure of the Thesis

This thesis is structured as follows. Chapter 1 is the introduction. Chapter 2 presents a review of the empirical literature on corporate governance. Chapter 3 presents a review of the theoretical and empirical literature on privatisation in non-transition economies. Chapter 4 presents a review of the empirical literature on privatisation in China. In conclusion it identifies the current gaps in the privatisation literature which this thesis addresses. Chapter 5 discusses the issues regarding methods, sampling and data collection. Chapter 6 outlines the empirical research methodology that underpins this thesis. Chapter 7 explores the data used in performance change analysis. Chapter 8 presents the empirical study in which the financial performance of the sample firms is analysed so as to identify the effect of share issue privatisation or IPO on firm performance. Chapter 9 presents the regression analysis to identify the determinants of performance changes after privatisation or IPO. Chapter 10 presents the post-IPO performance analysis, in which the relationship between firms' post-IPO market performance and post-IPO accounting performance is further explored. Chapter 11 presents the evidence of the effect of IPO on constitution, financing and corporate management based on the evidence from 16 listed firms. Chapter 12 presents the effect of IPO on corporate governance practice of listed firms based on the evidence from 16 listed firms. Chapter 13 summarises the findings of all the empirical work; limitations of the study and issues for future research; and further proposes recommendations to improve firm performance.

Chapter 2   Literature Survey - Corporate Governance

Privatisation is a means to better corporate governance. In the developed markets where corporate governance mechanisms are well established, the ownership changes after privatisation could lead to improvement in corporate governance and subsequent improvement in firm performance. Therefore ownership structures tend to be the key determinants in firm performance, which is an implicit assumption in privatisation studies in non-transitional economies. In China's transitional context, firms' financial performance after privatisation might be not only determined by ownership changes but also by newly introduced corporate governance practice. Therefore understanding corporate governance mechanisms and corporate governance practice is crucial to understand the financial and operating performance of newly privatised firms in China. In later regression analysis of determinants of firms' performance changes[2], corporate governance variables such as board size and human capital etc. are hypothesised as driving forces in performance changes. This chapter surveys basic corporate governance mechanisms in developed markets so as to get some understanding of the complexity of available systems and to build further foundation in case study analysis of corporate governance practice in newly privatised firms in China.

2.1 Agency Theory

2.1.1 Organisation and Contracts

Fama and Jensen (1983) regard an organisation as the nexus of contracts specifying the rights of each agent in the organisation, and writing contracts is not costless. Therefore the key to understand the complexity of the modern corporation is to understand it as a network of many implicit as well as explicit contractual relationships. Hart (1995b) suggests that contracting costs may be large because of the cost of thinking about all the different eventualities that can occur during the course of the contractual relationship. Because of the existence of costs and contingency in a contract, the parties involved can only write a contract that is incomplete or implicit - the contract will have gaps and missing provisions.

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[2] This is further demonstrated and discussed in Chapter 9 (pp170) – performance change regression analysis.

2.1.2 Agency Problem - Separation of Ownership & Control

In a free market economy, essential attributes of a public corporation include separate identity from its shareholders, limited liability for shareholders, centralised management and transferability of shares. In a public corporation, decisions are made by some individuals and carried out by others, which is an essential part of the mechanism by which corporations function (Arrow 1974). One complexity that then emerges from modern organisation is the agency problem, or principal-agent problem. Berle and Means (1932) suggest that the agency problem arises when there is a separation of management and control. Specifically, Shleifer et al (1997) argue that the essence of the agency problem is the separation of management and finance, or of ownership and control because of the existence of asymmetric information between themselves and external investors. Fama and Jensen (1983) argue that if agency problems occur because of asymmetric information, then there would be no agency problem if the monitoring were perfect. Because there is no perfect monitoring and monitoring or governance is always needed, and because not all agents will take self-interested actions at the principal's costs, spending too much on monitoring agent behaviour is wasteful. Therefore there is a trade-off between the resources spent on monitoring and the possibility of agent misbehaviour.

2.1.3 Agency Problem, Agency Cost & Agency Contract

The amount of monitoring is important with respect to efficient resource allocation and the more monitoring there is, the harder it is for an agent to misbehave – but the extra monitoring costs money, and these are so called agency costs. Jensen and Meckling (1976) define agency costs as reductions in value resulting from the separation of ownership from control in public corporations. Emery and Finnerty (1997) suggest that agency costs are the extra costs of having an agent act for a principal – those in excess of what it would cost the principals to do it themselves, such as direct contracting costs, including the transaction cost of setting up the contract and the cost to the principal of monitoring the agent and the financial costs the principal suffers as a result of misbehaviour in spite of monitoring. In dealing with agency costs, Fama and Jensen (1983) suggest that agency contracts are designed to eliminate agency costs, which include the costs of designing and

implementing monitoring, constraints, incentives and punishments and bonding a set of contracts among agents with conflicting interests.

Hart (1995a) argues that agency problems alone do not provide a rationale for corporate governance or monitoring. If the contracts between the principal and the agent are optimal in the sense that it specifies all parties' obligations and there is no 'residual' decision, then it is hard to find a role for corporate governance. But because of unforeseeable future contingencies, complete contracts are technologically not feasible and the manager and the financier have to allocate residual control rights – the rights to make decisions in circumstances not fully foreseen by the contract. Therefore he concludes that governance structure does matter if two conditions are met: agency problems are present and agency contracts are incomplete. In a similar vein, Shleifer and Vishny (1997) suggest that governance matters when some actions have to be decided in the future that have not been specified in an initial contract between agent and principal and governance structure provides a way or mechanisms for deciding these actions.

2.1.4 Defining Corporate Governance

From a management perspective, Tricker (1984) suggests that corporate governance is concerned with the processes by which corporate entities, particularly limited liability companies, are governed. He further distinguishes the management role as to focus on managing the business efficiently and effectively – the product designs procurement, personnel, management, production, and marketing and finance functions. In contrast, he regards governance role as to give overall direction to the company, overseeing actions of management with legitimate accountability. In other words, if management is about running business, governance is about seeing whether it is run properly. Fama and Jesen (1983) define the corporate decision process as four steps: initiation, ratification, implementation and monitoring, in which decision management includes initiation and implementation of decisions, and decision control includes ratification and monitoring of decisions. They suggest that controls agency problems that result from separation of ownership and control is to separate management (initiation and implementation) and control (ratification and

monitoring) of decisions, in other words, to separate management and governance functions. From a financing perspective, Shileifer and Vishny (1997) suggest that corporate governance deals with the ways in which suppliers of finance to corporations assure themselves of getting return on their investment. They raise three key questions of how do suppliers of finance get managers to return some of the profits to them; how do they make sure that managers do not steal the capital they supply or invest in bad projects and how do suppliers of finance control managers. From an internal governance perspective, Brealey and Myers (2000) argue that corporate governance refers to the role of the board of directors, shareholder voting and proxy fights and other actions taken by shareholders to influence corporate decisions. They suggest that how to make the corporate board of directors accountable to shareholders is a fundamental question in any market economy. In short, as suggested by Tricker (1984), the role of corporate governance is to prevent abuses of corporate power without necessarily inhibiting flexibility, innovation and entrepreneurial risk taking as well as improving the quality of board activities with higher effectiveness and efficiency.

2.2   Corporate Governance Mechanisms

Without monitoring, there is a danger that the managers of a public company will pursue their own goals at the expense of those of shareholders (or stakeholders) hence well designed checks and balances on managerial behaviour to reduce agency costs should be in place. Klipper (1998) suggests that corporate control mechanisms include efficient capital market, sophisticated professional accountants applying internationally recognised accounting standards, full financial disclosure and reliable information service, sophisticated courts and administrative agencies. Similarly, Jensen (1993) argues there are four control forces to resolve agency problems – capital markets, legal / political / regulatory system, product and factor markets and internal control system headed by the board of directors. He suggests that agency problems created by separation of ownership and control are offset by the right incentive for management, particularly compensation to managers tied to changes in earnings and shares prices; the legal duty of managers and directors to act in shareholders' interest, backed up by monitoring by auditors, lenders, security

analysts, and large institutional investors; and the threat of a take-over. As suggested by Gilson (2000), in publicly held corporations misuse of free cash flow is policed internally by the board of directors, and externally through shareholder action either through voting or through market control through share prices.

Corporate systems in different areas of the capitalist world differ with respect to their historical, political and culture origins. There are two corporate governance systems predominant in developed economies. One is the Anglo-American "market-based" model with widely dispersed shareholders and more emphasis on external control mechanisms in terms of market for corporate control. The other is the German-Japanese "bank-based" (or relationship-based) model with the large banks and interfirm holdings playing a key governance function. Each model represents each society's response to concerns about the principal-agent problem as well as efficient organisation for production and performance monitoring. There is a great deal of disagreement on how good or bad these existing governance mechanisms are. But in general, these developed economies have solved the problem of corporate governance reasonably well in that they have assured the flows of capital to firms, and actual repatriation of profits to the financiers (Shleifer and Vishny 1997). The remaining chapter further details the corporate governance mechanisms that are functioning in above-mentioned two dominant corporate governance models.

2.2.1 Legal Device

Lin (2000) suggests that legal device includes statutory provisions and monitoring, compliance and enforceability of these legal and other statutory requirements. Statutory provisions are those relating to the definition and exercise of shareholders' rights, oversight mechanisms and disclosure, contained in the legal and other (financial and securities) regulatory framework of the country, and further developed in the charter of the company. Most important legal requirements include company law, securities law, bankruptcy law, insider trading and disclosure rules and other rules regulating banks' and funds' involvement in the equity market. Black et al (2000) suggest that legal devices are directly affecting corporate governance, such as company and securities laws and minimum norms and standards for managers

aiming at protecting shareholders' rights. For instance, as argued by Maher and Andersson (2000), bankruptcy legislation, by influencing the claims and control of different investors in the event of insolvency, plays an important role in corporate governance. Black (1992) suggests that legal rules could also help shareholders overcome collective action problems, such as reducing monitoring costs, shifting some costs to the firm where they will be borne pro rata by all shareholders, limiting managers to use corporate funds to oppose monitoring efforts etc. Meyer (2000) argues that developing an effective method of protecting the rights of outside investors – especially shareholders – is a prerequisite for developing a modern financial system that can provide external capital for growing firms. Since the establishment of the two stock exchanges, Chinese government has introduced various laws and rules, such as Company Law, Securities Laws to improve corporate governance in newly privatised firms.

2.2.1.1   Shareholders & General Shareholder Meeting

The most important legal right shareholders have is the right to vote in important corporate matters at a shareholders' meeting. Tricker (1984) suggests that the power to govern the company is derived from ownership and ownership and control structures are at the heart of the corporate governance issue. Ownership can be either dispersed or concentrated.

(1) Dispersed Ownership

As argued by Kaplan (1995), diffuse ownership structures are necessary in that the market for corporate control can then act as effective disciplining device. Stern et al (1997) also suggest that one of the main advantages of dispersed ownership is its efficiency in spreading risk among well-diversified investors. But Hart (1995b) argues that when ownership is dispersed, the free-rider problem emerges, in which shareholders have less incentive to monitor an incompetent management team since the benefits from monitoring are shared with all shareholders while costs are incurred by those who monitor. Shareholders may free ride in the hope that other shareholders will do the monitoring job. Dispersed shareholders have little or no incentive to monitor management and the result is the reduced effectiveness of market for

corporate control. Therefore Prahalad (1993) argues that for very large firms, widely distributed ownership leads to powerless shareholders. Furthermore, Greenspan (2002) points out as ownership becomes more dispersed, few shareholders have sufficient stakes to individually influence the choice of boards of directors or chief executive officers, and the vast majority of corporate share ownership is for investment, not to achieve operating control of a company.

(2) Concentrated Ownership

Demsetz et al (1985) argue that the more concentrated is ownership, the greater the degree to which benefits and costs are borne by the same owner. In other words, concentration of ownership means concentration of risk-bearing. Hart (1995b) suggests that the free-rider problem is reduced to the extent that a firm has one or more large shareholders and a large shareholder has incentives to monitor because of sizeable faction of the gains and has incentives to vote because his vote may be pivotal. Therefore Black (1992) argues that legal rules that prevent shareholders from owning large stakes prevent shareholders from acting jointly, or increase monitoring costs all reduce oversight. Conversely, rules that reduce costs or facilitate cost-sharing among shareholders would encourage oversight. Shleifer and Vishny (1997) suggest that the principal advantage of large investors (except in takeovers) is that they rely on relatively simple legal interventions, which are suitable for even poorly informed and motivated courts. In other words, large investors put a lighter burden on the legal system than the small investors might if they tried to enforce their rights. But Coffee (1999) poses a crucial question of whether concentrated ownership will be more efficient than one characterised by dispersed ownership – at least in transitional economies. He argues that even if concentrated ownership implies superior monitoring of management, the benefits have to be balanced against the enhanced risk of expropriation by controlling shareholders. Maher and Andersson (2000) argue that one of the consequences of rent extraction by controlling shareholders is that it raises the cost of equity capital, as minority shareholders demand a premium on shares issued. This problem may become particularly serious in an illiquid equity market where small investors lack opportunities for risk diversification. When ownership is concentrated in hands of institutional investors,

as argued by Porter (1992), the performance of money managers is typically evaluated based on quarterly or annual appreciation relative to share indices, which encourages them to seek short-term share price appreciation. Charkman (1994) suggests there seem to be two main choices for institutional investors in terms of active investing and active trading, and the characteristics of these two can be summarised as follows:

Active Investing	Passive Investing (Active trading)
- Concentration of the portfolio on fewer shares; - Large stakes in individual firms; - Close (and often direct) communication with firms in which such investments are held; and the exercise of influence where appropriate; - High loyalty factor to the firm; - Few dealings in those shares and less freedom to deal with whole stakes because of the effect on the market; - General interest in corporate governance matters.	- Wide diversification – many different shares and small stakes in each firm; - Communication, if any, with firms mainly about matters which will have a short-term effect on price; - Low loyalty factor; - Frequent dealing; - Interest in corporate governance virtually non-existent.

Black (1992) argues that institutional shareholders are imperfect monitors, but the question is whether oversight by institutional shareholders is better than no shareholder oversight at all. In China, the ownership is concentrated in hands of either state or legal person shareholders in the form of non-tradable shares[3]. In regard to the institutional investors, they are currently not sophisticated enough to exercise a monitoring function and still in their infancy. The de facto state-controlled Chinese investment funds and investment companies have been actively trading instead of monitoring firms.

2.2.1.2 Creditors

Corporate control may not only be exercised by equity holders, but also by other stakeholders such as creditors. For large creditors, Saba (1997) argues that if a firm's main debt holder is its bank, this may reduce the degree of information asymmetry, as banks are likely to have better access to firm information together with a more detailed knowledge of the firm. For dispersed creditors, Shleifer and Vishny (1997) suggest that corporate control exercised by dispersed creditors is likely to be more

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[3] A legal person in China is defined as a non-individual legal entity or institution. See appendix 2.2 (pp291) for the definition of different types of Shares.

powerful than that of dispersed equity holders. As argued by Gertner and Scharfstein (1991), if a borrower defaults on debt held by a large number of creditors, renegotiating with these creditors may be extremely difficult, and the debtor firm might be forced into bankruptcy. In contrast, it may be easier for the debtor firm to renegotiate with just a few creditors, e.g. a bank. There are also some costs associated with creditors. If a large investor is an equity holder, he may have incentives to take risk; if a large investor is a creditor, such as a bank, he may be risk-averse and cause the firm to forego good investments projects. Generally, Chinese banks are state-owned and suffer from large non-performing loans from SOEs, and banks have not solved their own corporate governance problems hence they lack expertise to monitor firms as creditors do in the developed countries.

2.2.1.3 Financial Reporting & Auditing

Financial reporting is an important element of the system of corporate governance, and inadequate or false financial reports may cause some failures in corporate governance. Shareholders and providers of finance who are external to the firm need information to monitor directors who have access to management information. Whittington (1993) suggests that financial accounts are a means of relieving this asymmetry by providing reports from the directors to providers of finance, and the external audit process provides an independent check on the quality of these reports. Bensen (1982) provides a very challenging view of the role of accounting standards for enhancing corporate governance and social responsibility. He argues that for accounting standards to be useful tools to enhance corporate governance and responsibility, two criteria must be met:

- A standard providing a generally understood and accepted measure of the phenomenon of concern and auditable or verifiable reported numbers;
- A standard significantly reducing the amount of manipulation of the reported numbers likely to occur in the absence of the standard.

In practice, the application of accounting standards is more challenging than these two criteria. For example, historical cost is often a poor measurement of economic values and accounting standards might require corporate reporting of the economic

cost measured with respect to the opportunity benefits and costs. In practice it is either unknown what the best decision might have been or whether an accountant would have the skills to make these measurements. On the other hand, measurement affects motivation and managers are likely to be inappropriately motivated if the measurement is inappropriate. Furthermore, because no standard can apply with equal relevance to all corporations and situations, standards must impose costs in the form of useless or dysfunctional reporting. For instance, the US GAAP and the UK GAAP have both similarities and differences in terms of accounting frameworks, financial statement rules etc. Practically, the US GAAP is rule-based in which greater emphasis is on the consistency of financial information[4]. Meanwhile the UK GAAP is principle-based and puts greater emphasis on true and fair value of financial information. Soros (2002) suggests that different practice in the US and Europe has great implications on corporate accounting practice (e.g. Enron scandals) in the US, and he argues that rules are not enough and principles are needed as well.

Whittington (1993) argues that improvements in financial reporting may be a necessary condition for improved corporate governance, but they may not be sufficient. Improvements in financial reporting are likely to be facilitated by some form of regulation – self-regulation by professional bodies. If the professional body has monopoly power there will be pressure for private sector regulation in order to prevent abuse of monopoly power in favour of the profession. On the other hand, if the professional body lacks monopoly power, the self-regulation will have inadequate enforcement power and this will lead to calls for legal backing from the state in terms of a degree of public regulation.

China has been improving its accounting regulation in recent years, and based on International Accounting Standard, the Stock Company[5] Accounting Regulation introduced in 1997 and subsequently revised in 2001 requires listed firms to provide

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[4] See PricewaterhouseCoopers 2001.
[5] Stock company refers to those companies with limited liabilities, no matter they are listed at stock exchanges or not.

standard financial statements[6], including balance sheet, profit and loss account, cash flow statement etc.

2.2.2 External Governance Mechanisms

In addition to legal devices, external mechanisms that are outside the direct control of the firms play a critical role in monitoring, directing, and disciplining management.

2.2.2.1 Product Market

Product market competition forces managers to adopt the most efficient methods to maximise profits through market share and competition. Jesen (1986) suggests that competition in the product and factor markets tends to drive managers to increase efficiency of the firms and to enhance the probability of survival. Product market competition can also to some extent act to reduce the scope for managerial inefficiency and opportunism because there are fewer rents to be expropriated when markets are competitive. For instance, Prahalad (1993) argues that consumers constitute a distinct market and they impose their own kind of discipline on firms through the operation of a product market – one that operates even in the absence of capital market pressures. Meanwhile, the intensity of global competition has elevated the importance of technological capability and the central challenge in accessing technology is not just in building effective internal R&D capabilities, but also in establishing access to a supplier network around the world. As a result, there is intense corporate competition to gain access to supplier networks. But whatever the effects of product market, competition is slow to act towards management failure (Maher and Andersson 2000).

2.2.2.2 Capital Market

Corporate control means the power to make investment and financing decisions and who controls the firm and how it is governed could lead to extraordinary

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[6] The new accounting regulation is based on International Accounting Standard (IAS) convention. This is the first time it was introduced in A share (domestic) market, while in B share (foreign) market it was introduced in 1993, according to Financial Times International Accounting Survey 1999 (David Cairns, LSE London).

consequence (Myers 2000). Fama and Jesen (1983) suggest that equity and debt markets impose substantial constraints on managers in exercising their financing power. Lin (2000) suggests that efficient and competitive financial markets can provide financial discipline and incentives, especially equity markets where shareholders can exercise their "vote" in governance through "entry" and "exit". The external monitoring from a takeover market is unique to the open corporation and is attributable to the unrestricted nature of its residual claims. Franks and Mayer (1990) argue that in principle, ownership change through the capital market is an effective and efficient method of correcting managerial failure and they ensure that only those who are able to achieve the highest level of productivity and lowest costs of production remain in control and thereby encourage 'productive efficiency'. They suggest that takeovers, management buyouts and management buy-ins[7] permit those who attribute the highest value to running a corporation to take control.

Manne (1965) suggests that a fundamental premise underlying the market for corporate control is the existence of a high positive correlation between corporate managerial efficiency and firms' share prices. There are several mechanisms for taking over the control of corporations – proxy fight, direct purchase of shares and mergers, and the costs, practical difficulties and legal consequences of these approaches vary widely. Proxy fight appears to be inexpensive since one does not have to own a large number of shares in order to wage a fight but its uncertainty is high and it is relatively more common when there is widespread distribution of the firm's shares than when there are relatively large holdings. Direct purchase of shares is outright purchase on the open market of the requisite percentage of shares. In a merger, the acquiring firm uses its share to buy control of the acquired firm rather than cash. One major difference between the merger and the take-over device is that a merger requires the explicit approval of management of the acquired firm. Merger has several advantages over the other two control mechanisms. Mergers may be more desirable than proxy fights or takeover bids as a way of operating in the corporate

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[7] Takeover is a transfer of ownership from acquired to acquiring shareholders. A management buy-out involves the purchase of a firm in whole or in part by the incumbent management, which is typically the case in the US. A management buy-in is the purchase of a firm by a new incoming management, which is more common in the UK (Frank and Mayer 1990).

control market in which reliable information about valuable opportunities is not known to outsiders. Unlike individuals, managers of a competing firm almost automatically know a great deal of the information crucial to a take-over decision. In addition, merger leads to less wasteful bankruptcy proceedings and increased mobility of capital.

Franks and Mayer (1990) point out that the advantage of takeovers is that they assist in the correction of certain classes of managerial failure that are otherwise difficult to rectify, but takeovers also undermine contractual relations between investors, managers and employees. Similarly, Shleifer and Vishny (1997) also have some concerns about takeovers. For instance, some takeovers have potential to reduce competition and raise prices, they may represent a breach of employees' trust and transfer wealth from employees to shareholders through wage reductions and employment cuts and the greatest concern is takeovers reduce investment in physical capital and particularly in R&D. Therefore Franks and Mayer (1990) argue that financial markets in which takeovers are prevalent may suffer from 'short-termism' in that takeovers may result in a higher level of managerial correction but at the expense of long-term investment. They argue that there is a trade-off between different methods of correcting managerial failure. Maher and Andersson (2000) argue that with legal, advisory, and financing costs constituting on average 4% of the purchase price, this is a particularly expensive way of aligning the interests of management with those of shareholders. On the other hand, the takeover market does not only act as a means of correcting managerial failure as indicated in theory, but also targets well-managed firms. In a market for corporate control, a large unprofitable firm has much higher chance of survival than a small relatively much more profitable firm. Charkman (1994) suggests that because of the dual nature of the takeover market, there is generally a premium for control over the share trading price and shareholders' (of acquired firms) attention might be focused on the premium instead of on the quality of the management they abandon by tendering their shares. But he also admits that more competitive markets for finance and corporate control can lead to tighter monitoring of research activities by managers, with a more careful selection of projects and strengthened cost control. Prahalad

(1993) suggests that this investor control-oriented solution to the corporate governance problem are in effect **crisis-driven** – they are a means of dealing with crises in profitability that have already happened. On the other hand, the principal problem with such a control orientation is that it discourages managers from sharing information with investors. This control orientation must give way to more constructive, value adding relationship between management and investors. He suggests that a better approach would aim for **crisis-prevention** through more open and regular communication among managers, boards and major investors. In China, because of the dominance of the state and legal person shareholders and non-tradable nature of these shares, the takeover market in effect does not exist.

2.2.2.3 Managerial Market

Corporations compete not only on product and capital markets, but also on the labour market for specialised talent. The outside managerial labour market exerts many direct pressures on a firm to sort and compensate managers according to performance so as to align their interests with the investors. Given a competitive managerial labour market, when a firm's reward system is not responsive to performance the firm loses managers; and when managers perform badly the market will depreciate them. As indicated by Fama (1980), managerial labour markets appropriately use current and past information to revise future wages and understand any enforcement power inherent in the wage revision process, similar to the capital market that generally makes rational assessments of the value of the firm in the face of imprecise and uncertain information. Lin (2000) argues that competitive managerial job markets make managerial jobs "contestable" and thereby elicit managerial effort. Prahalad (1993) summarises that creating wealth for investors through efficient use of capital raised on the capital market depends critically on management's ability to manage the disciplines of the product market (imposed by sophisticated customers and suppliers) and the labour market (specialised talent). The challenge in China is that there are not enough talented managers in the managerial labour market to meet the demand from newly privatised firms or firms in private sectors, hence managerial market is less competitive than that in the developed countries.

On the other hand, how to measure company or managerial (company) performance is also debatable. Stern et al (1997) argue that the earnings per share-based model that has long dominated corporate America is becoming obsolete. Greenspan (2002) also suggests that cash dividends are unambiguous whereas there is no unambiguously correct value of earnings. Stern et al (1997) propose that EVA[8] – "Economic Value Added" – is the centerpiece of an integrated financial management system that encompasses the full range of corporate financial decision-making. As they suggested, in the end management must be held accountable for delivering value, not improving metrics. Furthermore, Aoi (1993) argues that the view of the corporation as accountable to a broad range of social interests also leads to a different way of evaluating corporate performance. In addition to profits earned by a particular company, there is another measure of corporate success that may be more relevant, in which the total social benefits derived from a corporation's activity should be based on social cost-benefit analysis (for instance, training, software and R&D as internal measures of performance, and environmental investment as external measures of performance).

2.2.3 Internal Governance Mechanisms

Jensen (1986) suggests that product and factor markets are often weaker in new activities and activities that involve substantial economic rents or quasi rents[9]. In these cases, monitoring by the firm's internal control system and the market for corporate control are more important. Given the fact that corporate control market is in effect ex post response to mismanagement, Jensen (1993) argues the very purpose of the internal control mechanism is to provide an early warning system to put the organisation back on track before difficulties reach a crisis stage.

2.2.3.1 Board of Directors

Internal control in public firms is delegated by shareholders to a board of directors and corporate boards are seen as providing the necessary checks and balances to

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[8] In the simplest form, EVA is net operating profit after taxes less a charge for the capital employed to produce those profits. They develop "EVA Drivers" to enable management to trace EVA through the income statement and balance sheet.
[9] Rents are returns in excess of the opportunity cost of the resources to the activity. Quasi rents are returns in excess of the short-run opportunity cost of the resources to the activity.

make the system work. Fama (1980) regards the board as a market-induced institution, whose most important role is to scrutinise the highest decision-makers within the firm. The board then delegates most decision management and many decision control functions to internal agents, but it retains ultimate control over internal agents (e.g. chief executive officer) – including the rights to ratify and monitor major policy initiatives and to hire, fire, and set the compensation of top level decision makers. Board attributes, such as the composition, representativeness, independence and qualification of board members, as well as the existence of sub-committees (headed by non-executive or independent directors) on audit, nomination and remuneration are to ensure that the board can be an effective overseeing body on behalf of stakeholders. Tricker (1984) defines board functions as following four principal activities – direction, executive action, supervision and accountability, in which the board formulates the long run strategic direction, be involved in critical executive decisions, monitor and oversee management performance and recognise responsibilities of those making a legitimate demand for accountability. In similar vein, Jensen (1993) believes the board has the final responsibility for the functioning of the firm, and it sets the rules of the game for the CEO, the board is to hire, fire, and compensate the CEO, and to provide high-level counsel. Overall, the board plays a major role in the corporate governance system and is responsible for monitoring managerial performance and achieving an adequate return for shareholders, while preventing conflicts of interest and balancing competing demands on the corporation.

(1) CEO & Chairman

Jensen (1993) suggests the function of the chairman is to run board meetings and oversee the process of hiring, firing, evaluating, and compensating the CEO. For the board to be effective to perform its critical function, it is important to separate the CEO and chairman positions. Furthermore, the independent chairman should be given the rights to initiate board appointments, board committee assignments, and (with CEO) setting of the board's agenda. As suggested by Pettigrew et al (1995), if it is the chairman's de facto role to run the board, it is by custom and practice the executives (including the CEO) to run the company by carrying out the board's decisions.

(2) Independent (Non-Executive) Directors

The notion of an independent (non-executive) director is reasonably straightforward, but it is a more difficult matter to categorise directors as independent. Maher and Andersson (2000) suggest that in order for board directors to effectively fulfil their monitoring role they must have some degree of independence from management. Effective separation of top-level decision management and control means that independent directors have incentives to carry out their tasks and do not collude with managers to expropriate residual claimants. In the US and the UK, various board committees dominated by independent directors have been set up, such as nomination committees, remuneration committees and audit committees, to improve governance at the highest corporate management level. Fama and Jesen (1983) hypothesise that independent directors have incentives to develop reputations as experts in decision control and the value of their human capital depends primarily on their performance as either managers or executives in other organisations. They use their directorships to signal to internal and external markets for decision agents that they are decision experts, they understand the importance of diffuse and separate decision control and they can work with such decision control systems. Fama (1980) suggests that the independent directors might best be regarded as professional referees whose task is to stimulate and oversee the firm's top managers and they are in their turn disciplined by the market for their services which prices them according to their performance as referees. In addition, Fama and Jesen (1983) also suggest that the independent directors act as arbiters in disagreements among internal managers and residual claimants.

Pettigrew et al (1995) further point out that knowledge and background appear to be crucial in shaping the character and credibility of independent directors' contributions. They identify two power sources in terms of external stature and prestige and internally generated power sources. The former is drawing on the external legitimacy of groups such as shareholders and regulators, knowledge of the host sector and/or business, the quality and extent of personal networks in and outside the board, residual power to reward and sanction and the threat of public or

private resignation. The latter is the power derived from a good quality relationship with the chairman or the chief executive, matching external expertise with company context, network building in the firm, power derived from the audit, nomination, or remuneration committees. As suggested by Main (1994), it is necessary to select non-executives who can be critical of the executive actions of a firm's management, which requires certain combination of character and technical competence to be brought to the board by the non-executives. In other words, non-executive representation on the board is not by itself enough to avert disappointing firm performance.

(3) Insider Board Director

Jensen (1993) suggests that since the possibility for animosity and retribution from the CEO is too great, it is almost impossible for those who report directly to the CEO to participate openly and critically in effective evaluation and monitoring of the CEO. Therefore, the only inside board member should be the CEO. Meanwhile, the practice of including inside directors on the board seems inconsistent with the need to separate decision management from decision control. Baysinger et al (1990) argue that outside directors may prefer to maintain an open relationship with top management, but they may simply lack the amount and quality of information upon which such relationships must be based. Including insiders on the board appears to represent an attempt to overcome problems of information processing and hence to improve the effectiveness of decision control.

(4) Board Size and Board Culture

Jesen (1993) suggests that keeping boards small can improve their performance and when boards get beyond seven or eight people they are less likely to function effectively, which means the better the information flow the better the dynamics. He also suggests that board culture is an important component of board failure. Pettigrew et al (1995) argue the key in shaping the board culture is the chairman and the significance of the attitudes and behaviours of the chairman and chief executive officer set the behavioural tone of a board. For instance, the great emphasis on politeness and courtesy at the expense of truth and frankness in boardrooms is both a

symptom and cause of failure resulting from a continuing cycle of ineffectiveness by rewarding consent and discouraging conflicts. On the other hand, CEOs have the same insecurities and defence mechanisms as other human beings and few will accept the monitoring and criticism of active and attentive board. They suggest that if CEOs have the power to control the boards, which in turn ultimately reduces the CEOs' and the firms' performance.

2.2.3.2 Incentive Contracts

As argued by Shleifer and Vishny (1997), when contracts are incomplete and managers possess more expertise than shareholders, management typically end up with the residual rights of control, giving them enormous latitude for self-interested behaviour. On the other hand, with dispersed ownership, managers end up with considerable discretion and the possibility to extract private benefits. Jensen (1993) suggests that managers may use their discretion to maximise firm size rather than profits; to hoard cash flow rather than pay out dividends; to pay themselves excessive salaries; or to entrench and protect themselves from indirect means of corporate control. A better solution is to grant a manager a highly contingent, long term incentive contract ex ante to align his interests with those of investors. Especially, Jensen (1993) proposes that encouraging independent directors to hold substantial equity interests would provide better incentives. Baker et al (1988) argue that while financial incentive schemes improve productivity in principle, in practice they induce significant adverse side effects that are costly to employee morale and productivity, in other words, monetary rewards might be counter-productive. They argue that monetary pay-for-performance systems are not ineffective but rather too effective in that strong pay-for-performance motivates people to do exactly what they are told to do. For instance, the common observation is that CEOs can increase their pay by increasing firm size or empire building even if they reduce the firm's market value. They suggest that management compensation should therefore be based on performance measured relative to the performance of all firms or firms in the same industry, rather than on absolute measures of firm performance. Furthermore, Stern et al (1997) argue that in practice too much emphasis gets placed on compensation and not enough on incentive schemes. They suggest that the proper objective is to

make managers behave as if they were owners in that owners manage with a sense of urgency in the short term but pursue a vision for the long term. In place of the traditional short-term bonus and ordinary stock option grants, they propose an Economic Value Added ownership plan that employs two simple and distinct elements. For instance, the EVA Bonus Plan stimulates ownership by tying bonuses to improvements in EVA over time, rather that the absolute value of EVA.

In addition, Main and Johnston (1992) argue that remuneration depends much on the quantity and quality of non-executive directors on the board from whom the remuneration committee is drawn. Their conclusion is that 'Simply grafting on an additional board sub-committee will of itself do little either for the disciplines of top executive pay or for corporate governance in general'. Greenspan (2002) also suggests that companies run by people with high ethical standards arguably do not need detailed rules to act in the long-run interests of shareholders and themselves. As argued by Skapinker (2001), how companies pay their top executives is less important than whom they are. Companies need to set up a remuneration system that works, but also need to find the right people first.

> *"If you have the right executives, they will do everything within their power to build a great company, not because of what they will 'get' for it, but because they simply cannot imagine settling for anything less."*

2.2.3.3 Financing Structures

Institutional arrangements such as tax and bankruptcy legislation may influence the extent to which firms are willing to tap the debt markets. By issuing debt a firm is able to shield profits from tax, while strict bankruptcy legislation and higher costs associated with the bankruptcy process would be expected to discourage firms from overborrowing and burdening themselves with debt obligations. Firms tend to issue equity rather than debt when their share price is high, but without a strong equity market, the debt market has to be the option. Jensen (1986) specifically discusses benefits of debt in motivating managers and firms to be more efficient. Debt can be an effective substitute for dividends because by issuing debt, managers are bonding their promise to pay out future cash flows and thus debt reduces the agency cost of free cash flow by reducing the cash flow available for spending at the discretion of

managers. But increased debts also increase costs because as leverage increases, the usual agency costs of debt in terms of bankruptcy costs increase. The bottom line is that firms should have optimal debt-equity ratio at which firm value is maximised and the marginal costs of debt just offset the marginal benefits. Stern et al (1997) suggest that heavy use of debt financing (such as in Leveraged Buyout – LBO) provides an automatic internal monitoring and control system, in which top management of LBO firms would be forced by the pressure of debt obligations to intervene quickly and decisively when problems emerge. By contrast, in a largely-equity-financed firm, management could allow much of the equity cushion to be eaten away before taking the necessary corrective action partially because operating managers tend to treat investor capital as a "free" good.

2.3   Discussion

This chapter reviews corporate governance mechanisms in terms of legal devices, internal mechanisms and external mechanisms, and these mechanisms are relatively functioning well in developed markets. The finance literature assumes that discipline on top managers comes from the capital market. As providers of equity capital, shareholders are the residual claimants who bear most the risk and the primary objective of management is to maximise shareholder value and the ultimate scorecard for managers becomes the current share price. Prahalad (1993) argues that the above view may no longer be appropriate and corporate governance is not simply a matter of giving investors more control over top management. To add value, top managers must consistently balance the demands of and be subject to the disciplines of four distinct markets – product markets (consumers), labour markets (specialised talent), the market for technology (suppliers) and capital markets (investors). Therefore stakeholder groups such as consumers, employees and suppliers now each deserves to be regarded as trading in a separate market in its own right. As suggested by Blair (1995), corporate governance should be regarded as the set of institutional arrangements for governing the relationships among all stakeholders that contribute firm specific assets. The above view of recognising non-shareholders is to clarify that key stakeholders, like capital markets, also impose unique set of disciplines on firms through the product market, managerial and labour markets etc. and consequently

firms must compete effectively in all of these markets to create value, not only in capital market. Despite important differences, corporations around the globe are all being forced to respond to the demands from all markets. Abegglen and Stalk (1985) suggest it is essential to appreciate that any company anywhere touches society at many points because it has stakeholders like customers, employees, supplier, creditors and shareholders, and it affects the environment in which it is located and shareholders are not the only investors.

China has been struggling to catch up with Western corporate governance practice by introducing governance legislation, rules and mechanisms from developed countries. Corporate governance mechanisms have been set up from scratch in listed firms at the time of going public. Prior to IPO, SOEs were owned by the government and there seemed little challenge to management running of the firms, and there was no demand for independent supervision or information disclosure, no intervention in matters of accountability, no questioning of corporate power and legitimacy. The concept of shareholder or owner is introduced and the new owner or shareholder has to learn how to exercise his power and concerns towards matters of corporate accountability and development of enterprise culture. The newly privatised firms are created in the absence of many control mechanisms that operate in the West in terms of legal devices, external and internal governance mechanisms discussed in this chapter. In addition, market forces such as product market competition and competitive financial intermediates shaping corporate governance in a market economy are still weak or developing. Thus the newly privatised firms often have neither the internal mechanisms nor the external forces to support their transition and economic growth.

For China, the road to a sound corporate governance system is characterised by not only economic, but also social and legal challenges. A sound governance system should be established in accordance with a country's specific social, political, economical and historical factors, not simply be imported without any justification. As argued by Coffee (1999), the puzzle of when law matters may lie in the hypothesis that what really counts is not the content of the substantive law, but the

adequacy of the enforcement mechanisms that underlie it. The concept of enforcement mechanism needs to be understood in a broader sense than simply the availability of specific legal remedies. In this sense, the willingness of law enforcement from the highest political level is crucial, especially in China. In chapter 8, the corporate governance mechanisms and practice in newly privatised firms in China are further investigated through case study analysis, and the reasons hindering performance improvement are identified and further governance reforms in China are proposed.

Chapter 3   Literature Survey – Privatisation in Non-Transition Economies

3.1   Privatisation Overview

As mentioned earlier, the privatisation of profit-organisations is the focus of this thesis and the privatisation of non-profit organisations and nationalisation of public sector are beyond the scope of this study, therefore this chapter only reviews privatisation literature in corporate sector or profit-organisations.

A privatisation is a sale of a government-owned company to private investors (Mayer 2000). In some privatisations the state disposes of all its ownership interest, while in others the state retains a minority or even majority ownership stake. When the state retains some ownership, the process may be termed partial privatisation (Chen et al 2000). Boycko et al (1996) suggest that theoretically privatisation means a combination of two changes undertaken by a reformer. The first is turnover of control from spending politicians to managers, often referred to as corporatisation. The second, which is usually part of most privatisation, is the reduction of the cash flow ownership by Treasury and the increase of cash flow ownership to managers and outside shareholders. Therefore they propose privatisation works in the sense that it widens the separation between the manager and the politician, and in this way stimulates restructuring.

Starr (1988) suggests that the meaning of privatisation depends in practice on a nation's position in the world economy. In wealthier countries it is easy to treat privatisation purely as a question of domestic policy and economically strong nations know that they can privatise without jeopardising their sovereignty. But where the likely buyers are foreign, as in the Third World, privatisation of state-owned enterprises often means denationalisation – a transfer of control to foreign investors or managers. Generally, the more dependent a nation is on foreign investment, the greater the likelihood that privatisation will raise the prospect of diminished

sovereignty and excite the passions of nationalism[10]. Therefore, the conflict between privatisation and national interests depends on the relative power of the given state in the world system – the weaker the state, the more likely the conflict. On the other hand, as a domestic issue, when a country's bureaucratic and entrepreneurial classes differ in ethnic composition, privatisation may be understood as a transfer of wealth and power from one group to another and be politically resisted for that reason. Therefore, privatisation needs to be understood as a fundamental reordering of claims in a society.

In the context of transition economies[11], privatisation become attractive as a quick and easy path to achieve economic and political objectives. Politically, Vickers and Yarrow (1991) suggest that privatisation presents significant opportunities for redistribution of income and wealth within a country. Economically, privatisation is regarded as a mechanism that would encourage effective corporate governance and restructuring in that private ownership and market forces are expected to force corporate restructuring and efficient production. Importantly, with regard to the economic and political importance of the government in privatisation, Starr (1988) points out that in the liberal world the terms "public" and "private" sum up a whole structure of rules and expectations about the proper conduct and limits of the state.

3.1.1 Purpose of Privatisation

As described in PricewaterhouseCoopers (1989, page 10), the purpose of privatisation is to raise revenue for the state; to promote increased efficiency; to reduce government interference in the economy; to promote wider share ownership;[12] to provide the opportunity to introduce competition; and to expose

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[10] Despite its commitment to free markets, the Reagan Administration intervened in 1987 to prevent the sale to a Japanese corporation of a private American semiconductor company with important defence contracts (Starr 1989).

[11] Transition economies refer to those countries with non-free market economy in former socialist countries such as Central and Eastern Europe, Russia, former Soviet Union Republics and China etc.

[12] Megginson et al (1994) suggest that the desire to promote wider share ownership typically has both a financial and political component. Financially, increasing the number of investors willing to purchase corporate equities increases the absorptive capacity of the nation's capital market, thereby either lowering the cost of capital for firms or increasing the number of companies able to raise capital at prevailing rates, or both. Politically, broadening share ownership is perceived to increase public willingness to back market-oriented economic policies and also tends to make it very difficult for subsequent governments to attempt to renationalise divested companies.

SOEs to market discipline.

The International Finance Corporation (1995) states:

" Privatisation can deliver a wide range of economic benefits...include improving enterprise efficiency and performance, developing competitive industry which serves consumers well, assessing the capital know-how and markets which permits growth, achieving effective corporate governance, and, of course, getting the best price for the sale. There are wider economic benefits which spill over to the rest of the economy...(such as) developing capital markets...governments also have more overtly political aims. In the former Soviet Union and Eastern Europe, the swift transfer of assets to private hands was an overridingly political aim: it was understood that economic benefits might not be immediate. Other political objectives include achieving a wide shareholder distribution, targeting certain classes of buyers (and excluding others, particularly foreigners), ensuring that enterprises do not close, reducing budget deficits/raising money and maintaining employment and other social obligations." (pp7)

In practice, the basic goal of privatisation is to increase the role of the private sector in the economy thereby promoting more efficient use of resources as well as efficiency and growth of industries. Megginson et al (1994) and Shleifer and Vishny (1997) suggest that generally the most important objective of privatisation is to improve the operating and financial performance of the former SOE by exposing it to the market forces. They argue that almost all governments expect that privatisation will increase the firm's profitability; increase its operating efficiency; cause the firm to increase its capital investment spending; increase its output without lowering employment levels, but most governments expect employment to fall. Meyer (1996) summaries the two main incentives for privatisation: efficiency and wider share ownership. He argues that on the one hand, privatised firms are exposed to the discipline of competition and insulated from political influence on investment and operating decisions, and managers and employees can be given stronger incentives to cut costs and add economic value. On the other hand, privatisation encourages share ownership by giving special terms or allotments to employees or small investors.

Boubakri and Cosset (1998) argue that in addition to general goals, under the pressure of international agencies such as the World Bank and the IMF, privatisation in developing countries is generally implemented as an integral part of a structural

adjustment programme, which includes measures such as liberalisation of trade and payment systems.

3.1.2 Privatisation Methods

Megginson and Netter (2000) suggest that the factors that influence the privatisation method include the history of the asset's ownership; the financial and competitive position of the SOE; the government's ideological view of market and regulation; the past, present and potential future regulatory structure in the country; the need to pay off important interest groups in the privatisation; the government's ability to credibly commit itself to respect investors' property rights after divestiture; the capital market conditions and existing institutional framework for corporate governance in the country; the sophistication of potential investors and the government's willingness to let foreigners own divested assets. In addition, the choice is influenced by capital market, political and firm-specific factors, and they report that share issue privatisations are more likely to be used when capital markets are less developed, presumably as a way to develop capital markets.

Gibbon (1997) discusses the steps that a government must take in developing a divestment program, which include setting up a structure for privatisation (including legislation, if necessary), providing adequate performance records for SOEs being sold (generating believable accounting data), developing necessary new regulatory structures, and determining the appropriate post-sale relationship between the firm and the government. Megginson and Netter (2000) point out that more complex issues in this area involves the interrelated questions of when to privatise, whether to privatise rapidly or slowly, whether to sell a SOE at once or in stages (staging), whether to restructure a SOE prior to sale (or to just restructure the SOE, e.g. lay off redundant workers prior to selling or leave this to the new owners), and the role of macroeconomic reform in privatisation.

In non-transition economies, especially in developed countries, privatisation methods are mainly asset sales and share issue privatisation and the latter has been the major strategy for governments to privatise large SOEs. In transition economies, especially

Eastern Europe and Russia, countries employed varying methods of privatising SOEs, including asset sales, liquidation, management-buyout, voucher privatisation, "spontaneous privatisation" (mass privatisation programme - MPP), share offerings or a combination of above techniques. Like most of the non-transition economies, China mainly employs share issue privatisation to partially privatise its large SOEs. Globally, share issue privatisation has been the dominant privatisation method in privatising large state-owned enterprises, which may be part of the reason why it has caused huge academic research interests.

3.1.3 Share Issue Privatisation (SIP)

Share issue privatisation is one of the privatisation methods in which some or a government's entire stake in a SOE is sold to investors through a public share offering. The difference between share issue privatisations (SIPs) and initial public offering (IPOs) is that IPOs are structured primarily to raise revenue for the original owners and IPO firms are normally owned by wealth-maximising entrepreneurs and continue the corporate objectives already in place before listing (Chen et al 2000). SIPs are structured to raise money for the state and to respond to some of the political factors mentioned earlier and corporate objectives will change to wealth-maximising after privatisation.

Megginson et al (1994) document four common features of share issue privatisation worldwide. Firstly, these share issues were immense, both in absolute size and relative to other issues made in their respective national capital markets. Secondly, most of the governments simply sold off their stake and no capital flowed to the firms[13]. Thirdly, SIPs have significant, politically motivated features, in which governments seemed much more intent on maximising the number of shareholders – at least in part to make the privatisation politically irreversible – than on maximising sale proceeds. Finally, a characteristic common to almost every SIP is a restriction on the fraction of the share issue that foreign investors could purchase.

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[13] Whereas in the case of Chinese share issue privatisation, share issue proceeds will normally flow to the newly listed or privatised firms to fund new investments and projects.

Megginson and Netter (2000) suggest that any government that intends to privatise state-owned enterprises using public share offerings faces three sets of interrelated decisions. The first is how to transfer control, which includes whether to sell the state-owned enterprises all at once or through a series of partial sales. If the government chooses the latter course, then it must determine how large a fraction of a firm's shares to issue in the initial versus subsequent offers. The government must also decide whether to insert any post-privatisation restrictions on corporate control. The second is how to price the offer, which requires that the government determine the amount of underpricing, whether the offer price should be set by a tender offer, a book-building exercise, or at a fixed price. If the fixed price is used, the government must decide whether the offering price should be set immediately prior to the offer or many weeks in advance. The third is how to allocate shares, which requires the government to choose whether to favour one group of potential investors over another (i.e., domestic investors, enterprise employees, or both, over foreign and institutional investors). It also requires deciding whether to use the best available investment banker as a lead underwriter (regardless of nationality) or to favour a national champion.

Accompanying by deregulation, competition and ownership changes, privatisation brings a huge impact on firms' financial performance and corporate governance. Due to the complexity in terms of the various privatisation methods employed in transition economies, the effect of privatisation on firm performance in transition economies will not be discussed here. The later survey of empirical literature mainly focuses on the impact of share issue privatisation on firm performance in non-transition economies.

3.1.4 Privatisation & Firm Performance

Theoretical literature in the west strongly suggests that privately owned firms will perform better than state owned ones. Transferring state enterprises to individuals amounts to a creation of owners, but only in the structural sense, it does not necessarily guarantee efficiency in enterprise operations. Vickers and Yarrow (1991) argue that competitive conditions and regulatory environment (in the broad sense)

are key determinants of performance after privatisation. Megginson et al (1994), Boycko et al (1996) and D'Souza et al (2001) argue that there are mainly three reasons why privatisation might cause firms to operate more productively. Firstly, privatisation subjects managers to the pressure of the financial markets and to the monitoring and discipline of profit-oriented investors. Secondly, the change in the firm's ownership redefines the firm's objectives or goals and the manager's incentives. Finally, releasing the firm from government control provides greater entrepreneurial opportunities as well as freeing the SOEs from the financial constraints imposed by the government's public sector borrowing requirements. For instance, Boycko et al (1996) suggest that privatisation could push firms to employ their human, financial and technological resources more efficiently due to the greater steer on profit goals and a reduction of government subsidies. Megginson et al (1994) suggest that privatised firms should increase their capital expenditures because they have greater access to debt and equity markets and have more incentives to invest in growth opportunities.

For Chinese SOEs, modern organisation structures and corporate governance mechanisms have been build up from scratch at the time of privatisation or IPO. Therefore, the performance of the newly privatised firms might not only be affected by ownership changes but also the proper functioning of the newly established modern organisation systems and corporate governance mechanisms. Unlike developed countries, under-developed corporate governance might play important role in financial performance of the newly privatised firms than merely ownership changes.

The following section presents a survey of privatisation and empirical results on firm performance in non-transition economies. The survey of privatisation and empirical results on firm performance in China is presented in Chapter 4.

3.2 Privatisation in Non-Transition Economies

Non-transition economies refer to those countries with a free market economy in both the developed and the developing world, in other words, all capitalist

economies. In most of the capitalist economies, corporate governance mechanisms have been functioning well in line with the free market and ownership change is the major cause of performance changes after privatisation.

3.2.1 Purpose & Methods

The purpose of privatisation in non-transitional economies is mainly to improve a firm's efficiency and/or to promote wider share ownership. The privatisation programmes in many countries have raised tens of billions of income for those countries' governments and have created millions of new shareholders, and have significantly reduced state involvement in enterprise decision making. In terms of privatisation method, case by case asset sales or share issue privatisation are widely employed in non-transition economies.

3.2.2 Firm Performance

There is a substantial literature that reports the results of empirical studies on the economic gains of privatisations, and there are two competing methodologies in examining performance changes resulting from privatisation. For instance, some studies compare actual post-privatisation performance changes with a comparison group of non-privatised firms, while other studies only examine share issue privatisation and compare their three years post-privatisation financial and operating performance to their pre-privatisation financial and operating performance.[14] One influential study is from Boardman and Vining (1989), and the competing one is by Megginson, Nash and van Randenborgh (1994). Various researchers have employed each methodology in their respective privatisation studies. The two representative methodologies in testifying the benefits of private as opposed to state ownership of firms have dominated the privatisation studies and the two methodologies and respective studies with their performance measures are summarised in Table 3.1. The empirical findings of each study are discussed in detail in the following section.

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[14] In addition, the one rarely employed method is to compare actual post-privatisation performance changes with the predicted performance of these firms if they had been SOEs. The difficulty is that it is hard to justify the predicted (or estimated) performance of firms if they had been SOEs.

Table 3. 1 Comparison of Performance Measures in Privatisation Studies

This table summarises and compares performance measurement or proxies employed in various privatisation studies.

Methodology & Major Studies	Performance Measurement or Proxies			
	Profitability Measures	Efficiency Measures	Leverage Measures	Others
Private versus State Ownership				
Board & Vining (1989)	ROA, ROE ROS, NI	Sales/Employee Sales/Assets		
Ehrlich et al (1994)				TFP
Dewenter & Malatesta (2001)	ROA, ROE ROS		liquidity/assets	Employee/Sales Employee/Assets (Labour Intensity)
Pre-Privatisation versus Post-Privatisation				
Megginson et al (1994)	ROA, ROE, ROS	Sales/Employee NI/Employee	debt/assets long-term debt/ assets	Real Sales Employment Dividend/Sales Dividend/Equity Capital Expenditure/ assets Capital Expenditure/ sales
Bourbakri & Cosset (1998)	all measures are the same as Megginson et al (1994)			
D'Souza & Megginson (1999)	all measures are the same as Megginson et al (1994)			
Chen et al (2000)	ROA, ROE ROS	Sales/Assets	debt/assets long-term debt/ equity	Capital Expenditure/ sales Capital Expenditure/ assets
D'Souza et al (2001)	ROS	Sales/Employee	debt/equity	Real Sales Employment Capital Expenditure (real)
Dewenter & Malatesta (2001)	ROA, ROE, ROS EBIT/sales EBIT/assets		liquidity/assets debt/ assets long-term debt/ assets	Employee/Sales Employee/Assets (Labour Intensity)
This Thesis	ROA, ROE ROS	Sales/Assets	debt/assets long-term debt/ (long-term debt + equity)	Real Sales Quick Ratio Net Working Capital

Generally, regardless which methodology is employed, the empirical results overwhelmingly show that firms' financial and operating performance improved after privatisation.

- **Methodology One: State versus Private Ownership**

Boardman and Vining (1989) examine the economic performance of 500 largest non-US industrial firms (mainly in Italy, France, Canada, Germany, Britain, Japan) in 1983 in which the data set contains 409 private corporations, 23 mixed (state and private) enterprises and 57 state-owned enterprises. Because the comparisons are drawn between state-owned, mixed and private-owned firms, three independent samples have to be selected.

In their study, four profitability measures are used: return on equity (ROE), return on assets (ROA), return on sales (ROS) and net income (NI). They argue that due to different methods of measuring depreciation and timing of profits and capital expenditures (in different countries), accounting rates of return are generally not equivalent to the economic rate of return. Nonetheless, accounting ratios are highly correlated with economic rates of return and they have been employed in numerous previous studies. In addition to the profitability indices, they also examine two efficiency measures - sales per employee and sales assets turnover. Due to the nature of their cross-country study, they also control the competitive and regulatory environment of the industry as well as systematic differences in national accounting practices in different countries.

Their results show that state enterprises and mixed enterprises are less profitable and less efficient than private corporations. With respect to profitability indicators, mixed enterprises perform no better and often worse than SOEs, while in terms of efficiency, mixed enterprises perform about the same as or slightly better than SOEs. In terms of sales per employee, mixed enterprises do better than SOEs, but in terms of sales assets turnover there is no substantial difference. In short, large industrial mixed enterprises and SOEs perform substantially worse than similar private corporations. These results indicate that there are performance differences between SOEs and private firms in the competitive environment. Boardman and Vining

(1989) also argue that the results also indicate that partial privatisation where a government retains some percentage of equity, which is occurring in many countries, may not be the best strategy for a government wishing to move away from reliance on SOEs.

Ehrlich et al (1994) focus on the influence of state ownership on firms' long-term rate of productivity, or cost decline based on an econometric analysis of international panel data on 23 airlines[15] over the period of 1973-1983. They find a significant link between ownership and firm-specific rates of productivity growth. Their results suggest that private ownership leads to higher rates of productivity growth and declining costs in the long run and these differences are not affected by the degree of market competition or regulation. They argue that productivity level differences due to an ownership change may be inconclusive in the short run and will eventually result in significant and widening level differences after some passage of time due to the cumulative influence of even a minor change in these rates. Through regressing total factor productivity[16] against ownership variables, they find that a switch from state to private ownership unambiguously raises the rates of productivity growth, or cost decline, whereas its effect on the levels of productivity growth and unit cost may be ambiguous in the short run.

Ehrlich et al (1994) argue that their results appear to be independent of whether the firms in their sample operate under an apparently more or less competitive market structure or in a more or less regulated market environment. This argument might be taken with caution, because by nature, airline industries are regulated in every country to a different extent. For instance, opening air and specific routes to other countries always involves heavy negotiation within governments and airline companies. In addition, entering into the airline business requires high initial capital. Therefore the airline industry is relatively insensitive to market competition compared with other industries such as manufacturing industry. Besides, nineteen out

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[15] Nineteen out of 23 airlines are from OECD countries, except Air India from India, PIA from Pakistan, Thai International from Thailand and Varig from Brazil.
[16] Ehrlich et al (1994) define total factor productivity (TFP) as the ratio of total output to input. See appendix 2.1 (pp290) for definition of total factor productivity.

of twenty three sample firms in their study are from OECD countries where the airline industries share much more similar features in terms of extent of regulation and tend to be less regulated than their counterparts in the developing world. Consequently there is no comparison benchmark for competitiveness of market or regulatory environment. Given these two factors, it is hard to justify from their study whether productivity growth is independent of market or regulatory environment or not.

Ehrlich et al (1994) also argue that their empirical results further indicate that partial privatisation of fully state-owned enterprises would produce a substantially smaller marginal improvement in productivity growth than complete privatisation would. Therefore they conclude that to meaningfully enhance long-term productivity growth, state-owned enterprises would need to undergo a wholesale conversion to private ownership. In short, the benefits of long-term productivity growth are based on complete privatisation of the firm.

Dewenter and Malatesta (2001) use accounting ratios to conduct a large sample cross-sectional comparison of government-owned and privately owned corporations, based on 500 of the largest industrial companies outside the United States published by Fortune magazine in 1975, 1985 and 1995. The methodology is similar to that of Boardman and Vining (1989), and profitability, leverage and labour intensity are examined. Profitability is measured by using conventional accounting ratios in terms of return on sales, return on assets and return on equity. The leverage is measured by total liabilities divided by assets and labour intensity is measured by employees divided by real sales or real assets. The results show a clear tendency for SOEs to be less efficient than private firms do. SOEs have statistically significantly higher average employees-to-sales ratios than private firms do; they also have higher average employees-to-assets ratios than private firms do, but the difference is not significant. The regression results also indicate that SOEs are less profitable and

much more highly leveraged than comparable private firms are, and they also use more labour in relation to sales than private firms do.

- **Methodology Two: Pre-Privatisation versus Post-Privatisation**

In privatisation studies, the competing MNR methodology was first employed by Megginson, Nash and van Randenborgh (1994) in their international empirical analysis of performance of newly privatised firms. They compare the pre- and post-financial and operating performance of 61 companies from 18 countries that experienced full or partial privatisation through public share offerings during the period 1961 to 1990, and document strong performance improvements in a given firm's operations following privatisation. Because the comparisons are made between pre- and post-privatisation financial performance of the same group of firms, only one (matched) sample has to be selected.

Megginson et al (1994) limit their analysis to those firms that were sold to the public through share issues, rather than through the direct selling of state firms to other firms or other methods. They argue that the largest and most economically significant SOEs are usually privatised through public share issues. Performance is measured by profitability, operating efficiency, capital investment, output, employment, leverage level and dividend payout. They employ a matched sample methodology to compare the pre- and post-privatisation performance measures mentioned above. They develop a performance "time-line" which reflects firms' performance for the three years pre-privatisation and three years post-privatisation period (the year of privatisation is excluded from analysis) and therefore pre- versus post-privatisation performance can be compared and the significance of changes can be tested.

They document significant increases in profitability, output per employee, capital spending and total employment, and also find that the financial policies of these former SOEs begin to resemble the lower leverage and higher dividend payout ratios typically associated with private, entrepreneurial firms. They document very strong performance improvements following both full and partial government divestments.

But they also document unchanged results when they compare firms operating in competitive versus non-competitive industries; when they examine control privatisations where the government surrenders control and contrast those with revenue privatisations where the purpose of privatisation is primarily to raise cash (for government); and when they compare privatisations in OECD countries versus developing countries. They argue that the very persuasiveness of these improvements and the fact that most share sales did not raise cash for the firm suggest that privatisation itself – the involvement of private investors in a firm's ownership structure – critically impacts a firm's operating and financial performance.

Boubakri and Cosset (1998) examine how privatisation in developing countries affects the financial and operating performance of the former SOEs. They compare average three years post-privatisation to pre-privatisation financial and operating performance of 79 firms from 21 developing countries that experienced full or partial privatisation during the period 1980-1992. Their sample covers a wide range of developing countries identified by the World Bank in 1987 (based on the country's level of GNP) as low-income economies, lower-middle-income economies and upper-middle-income economies. In addition, their sample also includes firms privatised not only through share issue privatisation but also direct sales since direct sales accounted for the vast majority of privatisations in developing countries from 1988 to 1993. They use the same ratios of performance measures and MNR methodology as those in Megginson et al (1994). To take account of the possibility and to isolate the effect of macroeconomic changes on the financial and operating performance of SOEs, they use both raw and market-adjusted accounting performance measures[17].

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[17] For banks and insurance companies, they use a market index comprising financial corporations. For other firms, the market index consists of non-financial corporation. They estimate the market index for each year as the median ratio for all financial or non-financial firms in the country in the Disclosure databases (excluding all privatised firms). Hence, the market-adjusted accounting performance measure of a firm is the difference between its accounting performance measure and the market median accounting performance measure of its country. Industry-adjusted performance measures are not used due to limitation of data.

In their full sample, both unadjusted and market-adjusted results show significant increases in profitability, operating efficiency, capital investment spending, output (adjusted for inflation), employment level and dividends. They also observe a decline in leverage following privatisation, but this change is significant only for unadjusted leverage ratios. Their results are generally robust when they partition their data into various subsamples, such as firms operating in competitive versus non-competitive environments, firms from upper-middle-income countries versus low-income and low-middle-income countries, for full versus partial privatisation, for control privatisation where governments surrender voting control versus revenue privatisations where governments sell a minority ownership stake. But they do find weaker performance improvements for firms from low-income and lower-middle-income countries. Furthermore, they find that the differences in the increase of profitability and efficiency are significantly larger for control privatisations and firms from upper-middle-income countries than for revenue privatisations and firms from low-income and lower-middle-income countries respectively. Therefore the above results might indicate that performance improvement gains of privatised firms in China might not be large due to the fact that state does not surrender its ownership in privatisation and China is still a low-income country.

Boubakri and Cosset (1998) conclude that privatisation brings with it private owners who place greater emphasis on profit goals and also carry out new investments that lead to increased output and employment. As a result, efficiency improves and profitability follows. They argue that their results, combined with those of Megginson et al (1994), suggest that in both developing and developed countries, newly private firms improve their performance.

D'Souza and Megginson (1999) examine share issue privatisation in developing and industrialised economies during the period of 1990 to 1996. Using a sample of 85 firms from 28 countries, they examine whether the operating and financial performance of these firms improves after they are privatised. The most heavily represented industries in their sample are electric utility, banking, telecommunication and petroleum. They examine the same variables used in Megginson et al (1994) and

Bourbakri and Cosset (1998), and test the same hypotheses that privatisation would increase a firm's profitability, operating efficiency, capital investment spending, output and dividend payout and decrease a firm's employment and leverage. In addition, they also perform similar tests for subsamples of firms from competitive versus those from non-competitive industries, control privatisation versus revenue privatisation, firms from industrialised versus those from non-industrialised nations, firms which change their CEO after privatisation versus those which do not, and firms which have more than 50% of director turnover versus those with less than 50%. They argue that the rationale for splitting the sample into competitive versus non-competitive industries is that privatisation in competitive industries is likely to yield solid and rapid economic benefits while the sale of enterprises in non-competitive sectors is more complex. They argue that selling voting control to outside investors is most conducive to efficiency improvement and thus control privatisations may yield more substantive performance improvement than do revenue privatisations. A large turnover of board directors in private firms represents both a powerful signal of a desire to change firm direction and a willingness to remove potential human capital constraints on the transformation process.

The results show that return on sales and return on assets increase significantly after privatisation, while the changes in return on equity are insignificant, and most subsamples also demonstrate significant post-privatisation increase in profitability. But firms operating in non-competitive industries experience a significantly greater increase in return on sales than do the firms from competitive industries. For efficiency changes, regardless of industry, nature of privatisation, director turnover etc., privatisation yields significantly higher real output per worker. Also, non-competitive industry firms experience greater efficiency gains than do firms in competitive industries, and control privatisations improve efficiency more than do revenue privatisations. Capital spending is found to decrease consistently, which is due to sales and total assets increasing at an even faster rate than capital expenditure. Real sales increase significantly and non-competitive firms and control privatisations experience significantly greater increase compared to their counterparts respectively.

In contrast to results from Megginson et al (1994) and Boubakri and Cosset (1998), they find employment declines significantly instead of increases, and they attribute this result to the fact that firms from regulated utilities represent over one-third of their sample. All of the subsamples also experience decline in leverage and increase in dividend payout, and privatisations of non-competitive firms yield significantly greater performance improvements (leverage reduction and dividend payout increase) than do privatisations involving firms in competitive industries.

In their results, the most intriguing effects they document are the multiple, significant differences in performance improvements between competitive and non-competitive firms, whereas Megginson et al (1994) and Boubakri and Cosset (1998) find generally insignificant differences between these subsamples. D'Souza and Megginson (1999) point out that the operating environment for electric utilities and telecommunication firms has changed rather dramatically during the 1990s, and these firms are experiencing substantial performance improvements in virtually all countries. Therefore they suggest that with their data set, they cannot determine whether these rapid performance improvements are the results of privatisation or whether privatisation is made possible by the performance enhancements resulting from more profound technological developments and a world-wide swing towards deregulation. They conclude that all three factors – massive technological change, a world-wide trend towards deregulation of utilities, and a desire among policy-makers to privatise and modernise suddenly dynamic and increasingly vital industries – contributed both to the heavy representation of electric and telecom utilities in the 1990s privatisation sample and to their remarkable performance improvements. Consistent with Megginson et al (1994) and Boubakri and Cosset (1998), they document that performance generally improves more for control than for revenue privatisations. The above findings may indicate that there could be differences in performance improvement between competitive or non-competitive[18] in Chinese privatised firms. With only partial privatisation, the deregulation of utilities has not been realised and monopoly of partially privatised utility firms still prevails, such as electric, telecom as well as highly regulated airline industries. There are some

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[18] They are also defined as regulated or non-regulated industries in this thesis.

technological changes in utilities firms following China's economic development and worldwide trend in technology boom, but not on a massive scale and firms are generally not technology-oriented. Therefore remarkable performance improvements in utility firms of 1990s privatisation sample in D'Souza et al (1999)'s study might not be seen in partially privatised Chinese utility firms in this thesis.

In addition to employing Boardman and Vining's (1989) methodology to compare performance of state-owned and private owned firms, Dewenter and Malatesta (2001) also employ MNR methodology by calculating the levels of the performance measures over different periods around privatisation and drawing inferences from changes in performance. Their sample includes 63 global firms listed in the Privatisation International data set and the study of Megginson et al (1994). In addition to profitability measures of return on sales, return on equity and return on assets and labour intensity measure, they calculate two more leverage measures in terms of debt to equity and long-term debt to equity. They also distinguish return on sales, return on equity and return on assets as net income profitability measures, and add EBIT (earning before interest and tax) to sales and EBIT to assets as earning before interest and tax profitability measures. They compare firms' pre-privatisation and post-privatisation performance based on two sets of test. In one set, average levels over the three years following privatisation are compared to average levels over the three years before privatisation (small window). In the other set, average levels over the five years following privatisation are compared to average levels over the ten years before privatisation (full window).

Their results show that return on assets and return on sales increase after privatisation, but changes in return on equity and in EBIT-based profitability measures are not significant for both small and full window. All the measures of leverage fall after privatisation for both short and long comparison periods. Dewenter and Malatesta (2001) also argue that even though state-owned firms are less profitable than private firms, they do not find much evidence that privatisation itself increases firm profitability. They confirm the results of Megginson et al (1994), who report significant increases in return on sales and return on assets during the three

years after privatisation, but return on equity is actually lower during the three years following privatisation than during the three years before privatisation. They argue that government may efficiently restructure at least some firms before selling them[19], therefore if government restructures firms and improves their performance before privatisation, then the improvements cannot be attributed to the change of ownership. Some Chinese SOEs also experience either debt or asset restructuring before being privatised, but these activities happen long before going public (e.g. average 1.5 years)[20]. It is obvious that state ownership could not improve firm performance before privatisation while the potential from restructuring to improve firm performance for the post-privatisation period is well diminished before privatisation. In short, debt and asset restructuring might play a minimal role in firms' performance improvement after going public.

D'Souza et al (2001) further identify performance determinants of firm performance after privatisation by examining the relationship between performance changes of a sample of 118 companies privatised through share offering from 29 countries during 1961-1995. They define determinant factors as the measures of capital market monitoring, development of economy, economic growth rates, changes in ownership, restructuring, changes in chief executive officers, changes in board of directors and exposure to competition. Having confirmed that newly privatised firms experience significant improvement in return on sales, real sales, sales per employees, capital expenditures and leverage reduction, they then search for the determinants of these performance improvements by partitioning their data into subsamples based on potential factors influencing a firm's post-privatisation financial and operating efficiency.

They document that firms from common law countries report significantly higher profitability (e.g. return on sales). Although the difference is not significant, firms from common law countries improve to greater extent in sales efficiency (sales per employee) than non-common law countries. Therefore, a country's legal system

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[19] For example, Japan National Railways reduced its workforce by approximately 200,000 and was split into seven separate rail companies before any share were sold to investors.
[20] See appendix 13.1 (pp308) for summary of survey analysis.

appears to affect post-privatisation performance. Firms in the competitive industries experience significantly greater employment increases and leverage reduction than firms in regulated industries. Interestingly, when they partition their data into two groups – firms where private investors own at least 50% of equity and firms where the government retains over 50% ownership, they do not find any significant difference in any performance measure. When they compare firms from OECD countries versus those from non-OECD countries, all performance measures indicate stronger improvements for the firms from non-OECD countries. This finding is consistent with Boubakri and Cosset (1998), who document impressive post-privatisation performance improvements of newly privatised firms in developing countries[21]. D'Souza et al (2001) also provide evidence that restructuring will "add value" to the newly privatised firms. Restructured firms generally experience significantly larger improvement in profitability, sales efficiency and leverage reduction. Non-restructured firms show significantly higher employment. Therefore restructuring leads to greater post-privatisation performance improvements. With regard to changes in CEO and board of directors, efficiency increases significantly only for firms with greater than 50% changes in board of directors, but efficiency and capital expenditure increase significantly and leverage decreases significantly only for firms with no changes in CEO.

They further develop regression models to identify determinants in each performance proxy. For profitability, nature of ownership is the most significant determinant. They identify a significant negative relation between profitability and employee ownership, and a significant positive relation between output and competition. Restructuring, financial market development and foreign ownership contribute to larger improvements in operating efficiency. D'Souza et al (2001) also document that firms become more profitable and efficient without reducing average total employment. They conclude that ownership, protection of shareholder rights and capital market development are the key determinants of performance changes after privatisation. D'Souza et al (2001) suggest that the pressing issue is no longer whether privatisation leads to performance improvements, but rather why do these

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[21] Including upper-middle-income, lower-middle-income and low-income countries.

post-privatisation performance improvements occur. Their study provides some answers regarding the sources of the financial and operating improvements of newly-privatised firms, which indicate that the level of capital market development, ownership change and firm restructuring are important indicators of post-privatisation performance.

3.2.3 Summary on Non-Transition Economies

The following table 3.2 summarises results of major privatisation studies examining share issue privatisation by employing MNR methodology.

Table 3.2 Summarised Results of Major Privatisation Studies Employing MNR Methodology

	ROS	ROA	ROE	SALES	LEV1	SAT	Sale/Emp	INV	EMP	DIV
Megginson et al (1994)	+	+	+	+	-	n/a	+	+	0	+
Boubakri et al (1998)	+	+	+	+	-	n/a	+	+	0	+
D'Souza et al (1999)	+	+	0	+	+	n/a	+	0	0	+
D'Souza et al (2001)	+	n/a	n/a	+	-	n/a	+	+	0	n/a
Dewenter et al (2001)	+	+	-	n/a	-	n/a	n/a	n/a	n/a	n/a

+: Represents significant increase in performance proxies
-: Represents significant decrease in performance proxies
0: Represents no change or non-significant change in performance proxies
n/a: Not measured in that particular study
(ROS, ROA, ROE, SALES, LEV1, SAT, Sale/Emp, INV, EMP and DIV represent return on sales, return on assets, return on equity, real sales, total debt ratio, sales to assets turnover, sales per employee, capital expenditure to sales, total employment and dividend payout respectively. The last four proxies can not be measured in this thesis due to lack of data.

Table 3.2 shows that with a few exceptions, the empirical results are consistent in all privatisation studies discussed in terms of improvement in profitability, efficiency, output, capital investment, dividend payout and decrease in leverage, with no change in employment. Next chapter further reviews privatisation literature and empirical results from China.

Chapter 4   Literature Survey – Privatisation in China

China is facing the challenge of privatising its large amount of SOEs as other transition economies did in 1990s, and it has been using partial share issue privatisation as its major privatisation strategy to privatise some large SOEs. This chapter introduces the background and process of privatisation in China, and further reviews empirical results of firm performance after privatisation from China.

4.1   Background

Like most other transition economies, economic reform in China requires embracing a great many economic and political changes simultaneously. As pointed out by Lew (1997), the Chinese government faces the question of to what extent the government can keep up a strong economic performance and at the same time lead the country - in the national interest - towards capitalism, without destroying itself as a result?

4.1.1 Economic Reform

In 1978 when economic reforms were initiated under the leadership of Deng Xiaoping, China designed its own reform agenda and was in favour of what it termed a *socialist market economy*. In focusing on agriculture, China chose to emphasise the development of the entire rural economy through the medium of Township & Village enterprises (TVEs). In case of privatisation, China did not even use the term privatisation, but emphasised private sector development before moving on to the partial privatisation of the state sector. During the early reforms from 1978 till early 1990s, China focused on introducing competition in the market place and removing production quotas and price controls from the government, and giving more decision making powers to managers. But creating markets for products and giving discretionary decision making powers to managers were not sufficient to optimise resource allocation and to improve SOEs' performance, which led the government to the view that private ownership may be needed in order to increase the economic efficiency of SOEs. As suggested by Woo (1999), as the Chinese leadership recognised the increasingly serious economic and political problems created by the decentralising reforms of market socialism, the debate between the conservative

reformers and the liberal reformers has progressed from whether privatisation is necessary to the question of the optimal form and amount of privatisation.

4.1.2 Privatisation Methods

The next question is whether SOEs should be fully privatised or be privatised gradually? Mass privatisation employed in other transition economies has not been on the agenda of China's reform due to political and economic sensitivity of mass privatisation. For instance, politically, to surrender control of the economy through mass privatisation would lead to ideological loss of socialist economy. Economically, given China's large population, it is harder to achieve equality in wealth distribution through mass privatisation. As argued by Starr (1988), governments that are in a hurry to sell state-owned enterprises may make concessions to current managers, whose co-operation is instrumental in divestiture and privatisation becomes an occasion for managerial enrichment and entrenchment (such as in Russia). Black et al (2000) argue that the freedom from state control that facilitates restructuring also facilitates theft. Based on privatisation failure in Russia, Black et al (2000) propose four strategies in the privatisation process: staging privatisation of large firms, designing the privatisation strategy, building institutions to control self-dealing or asset-stripping, corruption and organised crime and creating a friendlier business climate, especially a friendlier tax regime. Megginson and Netter (2000) conclude that the evidence demonstrating the benefits of privatisation is weakest for countries in Eastern Europe, where privatisation was implemented rapidly, which may suggest that privatisation should have proceeded along a more gradual path. Therefore the failure of the mass privatisation programme in Eastern European transition economies has reinforced China's strategy in its gradual approach to privatise SOEs on an experimental basis. Woo (1999) also suggests that gradualism (in terms of partial privatisation) in China is not so much the result of a particular theory of reform, but the result of political deadlock and compromises between the conservative reformers and the liberal reformers, and a general lack of consensus in the society at large. Since the early 1990s, along with the establishment of Shanghai and Shenzhen Stock Exchanges, there have been numerous partial share issue privatisation (SIPs), in which large SOEs were corporatised with part of their

shares sold to employees and the general public at the time of going public[22]. The partial ownership transfer is then termed as 'socialist-market economy', in which the state retains ownership of majority stakes in privatised SOEs (Chen et al 2000).

Meanwhile, the government' residual ownership and minority shareholdings leave the government as the largest shareholder in some privatised firms and pose governance problems that it is unable to deal with. Lieberman (1997) argues the fact that some governments in transitional economies have clawed back into an ownership position implicitly prevents market forces from functioning properly. Therefore Chinese government's dominant position as the largest shareholder in many listed firm could create vacuum of corporate governance. On the other hand, privatisation must proceed in tandem with the reform of the financial sector. Lieberman (1995) points out an area of direct linkage of the banks to privatisation programmes – the role of the banks in assuming equity positions in newly privatise enterprises. He suggests that in the short term, the commercial banks are important as a source of capital that will prevent the newly privatised firms from seeking government subsidies and they are also a potentially important source of long-term restructuring funds to the newly privatised enterprises. Moreover, they could become an important source of financial discipline over enterprises through their evaluation of the credit-worthiness of firms.

4.1.3 Purpose of Privatisation

The purpose of share issue privatisation in China is fundamentally different from that in developed countries, with not only the strong intention to improve firm profitability and efficiency and to create a market economy with sound capital market, but also establish and promote efficient corporate governance mechanisms. For instance, in most developed countries, the classic privatisation proceeds under the implicit assumptions that there are relatively few enterprises to privatise, that a market economy is already functioning in the country, and that capital is available domestically or can be attracted from abroad to purchase the enterprises being

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[22] While the preferred privatisation methods for small and medium-size SOEs has been employee (insider) privatisation (Woo 1999).

offered for sale. In contrast, China is a developing country and Boubakri and Cosset (1998) argue that developed and developing countries are not equally endowed with factors likely to influence the success of a privatisation programme. The developing countries are inhibited by embryonic financial markets, a weak regulatory capacity, and lack some of the main ingredients for successful privatisation, such as competent managers, entrepreneurs and capital. As recognised in World Development Report (1996) by World Bank regarding privatisation in centrally-planned economies of Central & Eastern Europe, the newly independent states of the former Soviet Union, China and Vietnam,

Policy makers have to weigh complex and often competing stakeholders, and cope with the administrative difficulty of privatising thousands of firms in a relatively short time and without mature, functioning capital markets (pp50-51).

Hence the benefits of privatisation should be examined within the economic environments and the institutional settings specific to those countries. Lieberman (1995) suggests that experience reveal that privatisation requires strong commitment at the highest political level and governments need to move from market player to market regulator or facilitator as required. Public information campaigns are vital to educate the public about privatisation in general and specific issues. There is also a need to link privatisation in the public's perception to the overall reform programme and the transition to a market economy. Lessons from other countries are crucial to the success of privatisation in China.

4.1.4 Corporate Governance, Legal Infrastructures & Corporate Efficiency

Xu and Wang (1997) point out that publicly-listed firms in China represent only a small subset of China's enterprises – a clean and perhaps better performing group of enterprises that were chosen to be listed on the two stock exchanges – Shanghai and Shenzhen Stock Exchanges, and they are clearly not representative of all enterprises in China, state or non-state. In addition, publicly-listed firms undertook the same restructuring process required by the China Securities Regulatory Commission (CSRC) before their public offerings, and their accounting books are converted to international standards and information disclosure has to meet the CSRC's

requirements. Therefore in terms of firm performance after privatisation, some may argue that it could be the results of wider macro- and micro-economical reasons. For instance, the performance failure of partial privatised SOEs might be due to the emergence of competition from the non-state enterprises. On the other hand, the reduction in the state's monitoring ability combined with the steady reduction in discrimination against the private sector also made it easier for the managers to transfer state assets to themselves (e.g. asset-stripping by managers or workers).

After privatisation, the firm enjoys financial autonomy but accepts financial independence in terms of hard budget constraints from the state. For a listed firm, the share price of the firm's equity is the publicly available indicator of the firm's performance and it seems that the financial market could exercise corporate control as in developed countries. In fact that the weak legal framework and poor enforcement mechanisms for ensuring private property rights remain unsolved in China. As argued by Shleifer et al (1997), without creation of large investors, agency costs of managerial control may arise and they suggest that both the legal protection of investors and some form of concentrated ownership are essential elements of a good corporate governance system. The challenge in China is that how the population replaces the state as the effective owner of SOEs, how can newly established investment funds demonstrate that they can play a positive role in distressed enterprises.

Subsequently, efficiency gains from privatised firms may not appear because of inadequate corporate governance and inadequate institutional infrastructures. Boycko et al (1996) argue that privatisation is just one of several steps that make it more expensive for government to influence firms. It reduces the amount of inefficiency that firms accept to satisfy government, but it does not make firms fully efficient. In China, entrepreneurial ability still has a long learning curve and business education for enterprise managers and new owners in technical areas such as financial management, restructuring, marketing, corporate governance and shareholder rights is essential. The requirements of technological excellence and financial resources are not readily available to improve SOEs' performance and the workers are used to

working without incentive under poor job performance measurement. Building up an enterprise culture, which brings these players together to mutual understanding and supportive attitudes, is crucial to improve a firm's overall performance after privatisation. As argued by Starr (1988), to some extent, enterprise culture must be understood in terms of micro as well as social efficiency, and this social efficiency is very important in that each nerve of the society has to be touched. Equally, improving corporate governance, establishing healthy capital markets, introducing market competition and eliminating political control of capital allocation are other important steps that make political influence more expensive. Lieberman (1995) argues that privatisation is an essential but not a sufficient element of restructuring, and it needs to be viewed as a part of comprehensive reform programmes to make firms more efficient.

One of the most important lessons China has learnt from other transition economies is that the development of a decent legal and enforcement infrastructure must precede or at least accompany privatisation of large firms. Privatisation itself is not enough; who the owners are, what constraints exist on self-dealing and the business climate they operate in all matter. Black et al (2000) suggest that if it is not feasible to introduce foreign owners, the state's second-best choice may be to first privatise selected firms with strong profits and reputedly honest mangers and watch these firms carefully once they are privatised, while building the legal and market institutions to control asset-stripping. It might be better to stage privatisation and work hard to develop this infrastructure, rather than privatise large firms anyway and hope that the outcome will somehow be acceptable. Therefore privatisation should be supported by sound legal and enforcement infrastructures and macro economic environment. When conditions are not met, staged privatisation seems advantageous. As argued by Lew (1999), protecting SOEs in order to avoid Russian-style chaos, an urban uprising even, is a key feature of the Chinese model of "transition".

4.2   Privatisation in China

Chinese SOEs must go through a process of corporatisation before they are listed at stock exchanges, as shown in figure 4.1.

Figure 4.1 Concept of Corporation and Privatisation of SOEs

Corporatisation = | The state and provincial governments select various SOEs to be corporatised, which involves recognising SOEs and forming them into limited liability companies and shares are owned by the state and various entities of the state.

Privatisation (SIP) = | Selected corporatised SOEs are privatised based on the quota set by the State Planning Commission, the People's Bank and the China Securities Regulatory Commission (CSRC). Local governments are responsible for selecting firms to be listed based on economic and financial needs, commercial viability, political objectives, society concerns etc. Shares are sold to individual investors (at least 25%) and the state and its entities retain at least 50% of the shares. Only individual shares are tradable (A share), and other forms of shares such as legal person, state and foreign have to be transferred through negotiation.

The corporatisation is fairly straightforward with SOEs are corporatised into limited liability companies with identified shareholders. In contrast, privatisation is much more complicated in that selected corporatised SOEs for share issue privatisation are not based upon free competition but upon economical, political, social and geographical concerns evaluated by local governments. For instance, China's overall economic success nevertheless masks growing regional disparities and the discrepancy between developed (such as Eastern and Southern China) and under-developed regions (such as West China) is increasing. Hence given the uneven economic development across various regions, competitive listing in the early years of privatisation would be both politically and economically undesirable. Therefore the selection criteria would not necessarily result in the selection of the most dynamic, successful and high-growth companies. CSRC has started to scrap the IPO quota system since March 2001 and firms to be nominated for public listing are subject to screening by an independent listing committee of the CSRC. The move helped to ensure that firms to be listed are of higher quality and the investment funded by the equity financing is more profitable. In addition, it put an end to harsh competition for the limited IPO quotas allocated to each local government every year, which blocked the growth of many well-performing large-scale enterprises and

private firms. Reforming of the listing regulatory framework will make the listing procedure more market-oriented and will greatly improve the general performance of listed firms (People' Daily 2001).

After privatisation or IPO, the basic feature of most privatised firms is that they are still majority either state or its entities (legal person shareholders) owned, and individual shareholders are minorities and their tradable shares account for only small fraction of total shareholdings. The following section details the privatisation process in China, including corporatisation, share allocation and share pricing.

4.2.1 Corporatisation & Reorganisation

The security regulatory authorities – the State Planning Commission (SPC), China Securities Regulatory Commission (CSRC) and the People's Bank of China (the Central bank) together determine the amount of shares that should be issued each year. The "total quota" is then broken down and allocated among provinces and a few major cities such as Beijing and Shanghai. The criteria used for allocation of new issues among provinces reflect the above-mentioned security regulatory authorities' perceived regional development needs and provincial differences in production structure and industrial base. If a SOE intends to be listed, it has to obtain approval from the local government, the State Economic and Trade Commission, the State Commission of Economic Restructuring and CSRC. Then the state and provincial government select various SOEs to be corporatised, which involves recognising SOEs and forming them into limited liability companies and shares are created and owned by the state and various entities of the state, such as other SOEs or majority state owned institutions.

Once a SOE has permission for a quota of total shares to be issued, it begins a reorganisation. The first step is to separate non-productive assets such as schools and hospitals from productive ones. Productive assets account for 50% to 75% of total assets of the to-be-listed stock company, while non-productive assets are left with the SOE. All retired workers also remain on the SOE's payroll. An accounting firm is then hired to audit the financial statements of the SOE for the last three years and the

separated productive assets. In the meantime, managers of the SOE contact other enterprises and institutions to ask whether they are willing to be legal person co-founders of the stock company. These legal person institutions themselves may be controlled by the state so long as they are not 100% owned by the state; equity they hold in the new stock company is classified as legal person shares. The local office of the Bureau of State Property Management (BSPM – a central government agency) acts as the largest shareholder of listed firms if SOEs are owned by central government or its agencies, and BSPM collects dividend revenues for the Ministry of Finance. The SOE also talks intensively with the local government and party officials for candidates of managers, the board and supervisory committee members[23]. The nomination must be confirmed at the first shareholder meeting and confirmation is nearly guaranteed since the state has a majority holding of the company.

4.2.2 Share Issue Privatisation

After the SOE receives approval for the appointments from its administrative supervisor and the local personnel department of the party, the SOE then needs to find a group of securities firms as underwriters. On the day of IPO, at least 25% of total shares are sold to the public, whereas shares classified as state, legal person, employee and foreign shares are not tradable and in effect only A shares owned by individual investors are tradable at stock exchanges.

High domestic savings in China might cause sufficient or even excessive demand for company shares. So why does the state keep a high percentage of residual shareholdings when firms go public? There are several possibilities for the state to maintain residual shareholdings in listed firms, including political motivation to control the economy, retaining a significant shareholding in strategic firms for political reasons or hoping to sell shares to raise revenue in the after market. However, state residual shareholding does have merit in that it may help to remove market imperfections created by monopolisation or the dominance of some domestic

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[23] According to Xu and Wang (1997), 80% of such firms end up with the arrangement where the original managers and party officials of the SOEs keep the key positions of the board and supervisory board in the new stock company.

or foreign companies, especially in transition economies where both free trade and protection should be well balanced to protect the vulnerable economies.

4.2.2.1   Types of Shares

The government has introduced several types of shares[24] in order to allow ownership of SOEs to be dispersed among the government itself, other state-owned enterprises, firms' own employees, domestic private investors and foreign investors.

- State Shares are held by central government, local governments, or solely government-owned enterprises and the ultimate owner of state shares is the State Council of China.

- Domestic institutions or foreign companies own Legal Person Shares. A legal person in China is defined as a non-individual legal entity or institution, in which domestic institutions include stock companies, non-bank financial institutions[25] and SOEs not wholly owned by the state. Securities firms, trust and investment companies, finance companies and mutual funds are major non-bank financial institutions. In rare cases, foreign companies are allowed to invest as legal persons in listed firms.

- Employee Shares are offered to workers and managers of listed companies, usually at a substantial discount. These shares are designed more like a benefit to employees. Employee shares have to be held for 6 to 12 months after an IPO and then can be sold at the stock exchanges following approval by the CSRC[26].

- Tradable A-shares are held and traded mostly by private investors and some by domestic institutions. There is no restriction on the number of shares traded, or on the holding periods. It is required that tradable A-share should account for no less than 25% of total outstanding shares when a company goes public. These shares are the only equities that are tradable at A-share market.

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[24] See Appendix 2.2 (pp291) for definition of five types of shares: state shares, legal person shares, employee shares, foreign shares and private (A) shares.
[25] The Commercial Banking Law of China (1994) prohibits commercial banks from underwriting, holding and trading securities except for government bonds.
[26] In 1998 the regulatory authorities issued a circular in relation to discontinuing the issuance of employee shares and the number of employee shares is gradually falling (Tenev et al 2002).

The above four types of shares are the main types of shares of the listed firms under study in this thesis[27]. Meanwhile, a firm must take a number of steps after it is selected for initial public offering and before public share offering. These steps include the publication of a prospectus in newspapers and selection of underwriters; a lottery or an auction mechanism to determine which individual and institutional investors will be allowed to purchase new issues that the IPO price; and delivery of shares to the lottery or auction winners after payments are made.

4.2.2.2   Share Pricing & Allocation

The offering mechanism adopted by most Chinese firms is quite different from those observed in the developed markets and has undergone several substantial changes over time. The offer price is chosen months before the market trading starts, and in the great majority of offerings there is no feedback mechanism through market demand that allows adjustment in the offer price. The lottery mechanism, which remains the primary method of share allocation, has also undergone several substantial changes.

- Before 1992, the security regulatory authorities designed a lottery system based on a pre-announced fixed number of application forms. Each retail investor was allowed to purchase a limited number of lottery forms from the central bank and its subsidiaries. Lottery winners were entitled to a certain number of shares per winning form.

- In 1993, the security regulatory authorities introduced two new lottery mechanisms. One mechanism was based on an unlimited number of application forms. The central bank sold as many lottery forms as investors were willing to buy. The odds of winning the lottery were unknown to investors at the time of the lottery. The other lottery mechanism was based on savings deposit certificates. Investors were required to deposit a certain quantity of funds into a special saving

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[27] In addition, B-shares are originally restricted to foreign investors and some authorised domestic securities firms, and they are denominated in US dollars at the Shanghai Stock Exchange and Hong Kong dollars at Shenzhen Stock Exchange. B-share market has been opened for domestic investors since November 2001. A-shares and B-shares issued by the same company carry equal rights and are comparable in all respects except for the trading currency. There are a few cases where firms issued H-shares at the Hong Kong Stock Exchange and N-Shares at the NYSE, either through IPOs or as ADRs.

account (giving relatively low interest) when submitting an application for shares, which could not be withdrawn until the lottery was completed.

- In 1994, two kinds of auction mechanisms were introduced. Under the first, an issuer set an initial price and investors were required to bid for the price and quantity. The final offer price was set at the level where the cumulative quantities demanded by investors equalled the total number of new shares available. Under the second auction mechanism, the offering price was fixed and investors were invited to bid for the quantity of shares. In case of oversubscription, all investors were guaranteed a certain amount of shares and the remaining shares were distributed on a pro-rata basis.

Firms could choose either lottery mechanisms or auction mechanism to distribute initial public offering shares. After the process of pricing and allocation is finished, shares can then be traded on the stock exchange at the pre-announced initial public offering date.

4.2.2.3   Voting Power & Control

After the IPO, the original SOE either disappears or becomes the majority holder of the stock company. The state, legal person (including domestic and foreign), employee and private (A-share) shareholders exercise their voting power and control through their direct shareholding of the firm. If the original SOE disappears, the local office of the Bureau of State Property Management (a central government agency, BSPM hereafter) acts as the largest shareholder of the listed company if the SOE was owned by the central government or its agencies before the IPO. Otherwise, the local finance bureau, or a local government-run holding company plays the role of the largest shareholder. In many listed firms, state holds more than 50% of shares and in effect has the ultimate control over the firms, but whether the state exercises its control is an critical issue on firm performance[28]. If the firms are founded by legal person shareholders, these firms are more democratic with less government interference. Even though the founding legal persons have to get permission to go public and a quota from government agencies, they can nominate board members and choose corporate officers at their will. It is not required to obtain government or

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[28] This will be further analysed through 16 cases in Chapter 11 (pp222) and Chapter 12 (pp240).

party approval of their choices. Consequently, the board membership of stock companies founded by legal person is less concentrated than that of state-controlled corporations transformed from SOEs. If there are a few legal person shareholders instead of concentrating on one, the balancing act in exercising control within legal person shareholders might have impact on firm performance. Employee shares are registered as individuals under the title of the labour union of the company that also represents employee shareholders to exercise their rights. After a holding period of 6 to 12 months, the company may file with CSRC for allowing its employees sell the shares in the open market.

Only a small number of legal person and state shares can be traded on the Security Trading and Automatic Quote System (STAQS) and National Electronic Trading System (NETS). Since only private A shares are tradable at A-share markets of the two official exchanges, in effect share prices at A-share markets are determined by the trading of private shares.

4.2.3 Firm Performance

The nature of privatisation in China differ markedly from those in non-transition economies, therefore the empirical results of firm performance after privatisation in China may differ from other countries. Chen et al (2000) suggest that the reasons for initiating privatisation programmes, privatisation processes, characteristics of privatised firms, maturity of stock markets, national economies, and political systems differ across countries, so the findings from a study based on one country cannot be automatically extrapolated to another country. In similar vein, the findings from non-transitional economies or free market economies also cannot be automatically assumed in China.

Chen et al (2000) examine 275 share issue privatisations during 1991 and 1995 (most of the listings took place in 1992 and 1993) and try to find out whether the strong international consensus that improved profitability and improved efficiency accompanies privatisations extends to China. They employ the same MNR methodology as Megginson et al (1994) but fewer economic variables. They examine

profitability, capital expenditures, sales efficiency and leverage. They suggest that lack of employment data means that many productivity measures used in other studies such as sales per employee cannot be calculated. In addition, changes in dividends are not examined as very few Chinese SOEs pay dividends prior to share offering. They document that return on assets, return on equity and sales assets turnover deteriorate after privatisation, and in absolute terms, return on assets and return on equity are very low, while return on sales and real sales do not change after privatisation. They find that the sales increase is not significant and sales gains after privatisation are less than those reported in studies based on data from other developing and developed countries. They argue that, given that the privatisation also raises capital for privatised firms to expand operations, it is very disappointing that sales have not improved after privatisation. This result is puzzling since real sales is expected to increase if privatised firms generally receive share issue proceeds to expand the businesses, as indicated in the analysis of case studies in this thesis. The lack of change in return on sales might be due to the fact that the increase in sales is offset by the increase in costs. They also find reduction in debt ratios as the new issue proceeds increase and in some cases part of the proceeds is used to repay debt; and they document significant increase in capital expenditure. They partition data into subsamples and find that the state of the economy when the IPO was made and the size of the firm are not significant indicators of changes in profitability, asset efficiency, capital expenditure, sales growth and debt ratios. Foreign ownership does not have a major influence on changes in profitability and changes in sales efficiency; level of state ownership has a weak association with sales growth and individual share ownership has no significant association with any of the performance measures.

Because Chen et al (2000) examine share issue privatisation in China employing MNR methodology, their results could be compared with other share issue privatisation studies employing MNR methodology and are summarised in table 4.1.

Table 4.1 Comparison of Results from China with Major Share Issue Privatisation Studies Employing MNR Methodology

	ROS	ROA	ROE	SALES	LEV1	SAT	Sale/Emp	INV	EMP	DIV
Megginson et al (1994)	+	+	+	+	-	n/a	+	+	0	+
Boubakri et al (1998)	+	+	+	+	-	n/a	+	+	0	+
D'Souza et al (1999)	+	+	0	+	+	n/a	+	0	0	+
D'Souza et al (2001)	+	n/a	n/a	+	-	n/a	+	+	0	n/a
Dewenter et al (2001)	+	+	-	n/a	-	n/a	n/a	n/a	n/a	n/a
China:										
Chen et al (2000)	0	-	-	0	-	-	n/a	+	n/a	n/a

+: Represents significant increase in performance proxies
-: Represents significant decrease in performance proxies
0: Represents no change or non-significant change in performance proxies
n/a: Not measured in that particular study
(ROS, ROA, ROE, SALES, LEV1, SAT, Sale/Emp, INV, EMP and DIV represent return on sales, return on assets, return on equity, real sales, total debt ratio, sales to assets turnover, sales per employee, capital expenditure to sales, total employment and dividend payout respectively.

The above table shows that study of Chen et al (2000) contrasts major share issue privatisation studies, in which some performance measures deteriorated after share issue privatisation.

In addition to comparing the mean performance before and after privatisation, Chen et al (2000) also develop regression models to explain the changes in performance from pre-privatisation to post-privatisation. They employ independent variables of change in GNP per capita, foreign ownership, ownership structure and control variables of firm size, industry and year of listing, but they document that their models fail to identify reasons for the deterioration in profitability and efficiency. The existence of foreign ownership of shares, high levels of legal person share ownership and high levels of individual share ownership do not mitigate the poor performance of privatised firms. Although these ownership characteristics are hypothesised to be positively related to performance because of the monitoring activities of the investors, the empirical support is very weak. They argue that corporate governance structures based on pressure applied on management by

investors do not appear to have much influence in improving firm performance[29]. In fact, based on their argument, Figure 4.2 gives a possible indication of the reasons why their models fail to explain performance changes.

Figure 4.2 The Relationship between Ownership, Governance and Performance
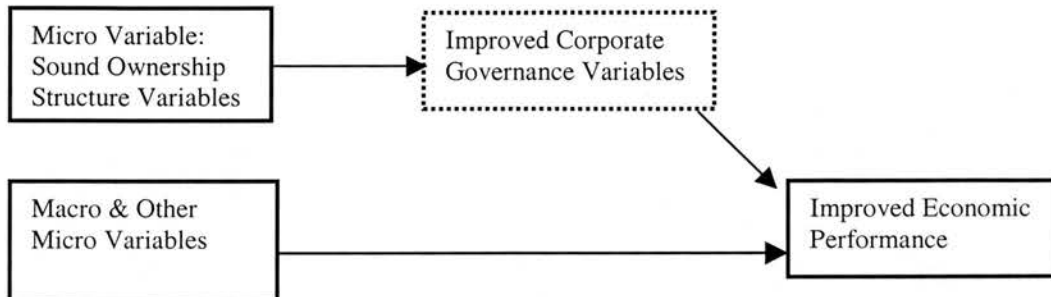
As shown in figure 4.2, a firm's economic performance is affected by its surrounding macro and micro variables. Macro variables are not in firms' control but have a direct impact on the firms' performance, such as a country's monetary, competition and regulatory policies. Firm level micro variables also bring direct impact on the firms' performance, such as business strategies etc. Specifically, ownership structure is an important micro variable and many researchers, including Chen et al (2000), try to model it as a direct explanatory variable in explaining performance change after privatisation. But change in ownership may not automatically improve the firms' economic performance; it is the subsequent improved corporate governance does the job. In other words, ownership change might have indirect impact on the firms' performance changes.

Figure 4.2 illustrates that ownership structure itself does not improve a firm's economic performance directly, but the accompanying improved corporate governance fulfils the task. In free market economies where ownership structure is strongly associated with corporate governance function, a firm's economic performance can be examined based on ownership structure directly. If ownership

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[29] Interestingly, after examining the economic performance of 14 privatisations where individual shareholders collectively own more than 50% of the shares, Chen et al (2000) find that the economic performance deterioration remains.

structure does not lead to sound corporate governance and the link between the two is weak, it could be difficult to detect the relationship between ownership structure and firm performance. Therefore, in the case where it is unknown whether ownership structure has association with corporate governance or not, in addition to ownership variables, corporate governance variables may have to be added into the analysis in identifying determinants in a firm's economic performance. Chen et al (2000) mainly employ ownership structures and macro and other micro variables to explain performance deterioration and fail to identify the reasons for performance changes. In this thesis, some corporate governance variables (e.g. size of board of directors, cross-sitting between board directors and executives, human capital of senior management) will be incorporated to identify the determinants in performance changes, which is further discussed in chapter 5 research design and methodology.

Nevertheless, Chen et al (2000) try to give some possible reasons for performance deterioration:

- The Chinese style of partial privatisation has inhibited the incentives and motivations associated with free market policies. Although privatisation represents a move towards individual ownership of firms, the state retains voting control.

- The senior and junior management of privatised SOEs are the same as before privatisation and managers are often political appointees who have little or no experience of running businesses.

- Bonus-incentives schemes based on corporate profitability and/or share price appreciation are rare or are of a small magnitude. The lack of pay incentive schemes and performance indicators provides no incentive for managers to maximise profitability.

- The incumbent senior management of many privatised firms lack the necessary skills and experience to successfully run their firms in the new economic environment and it will be impossible to replace all of them with highly skilled alternatives. In contrast, in developed markets, a large pool of skilled mangers is available from enterprise sector.

Chen et al (2000) conclude that the twin themes of weak corporate governance (accompanied by continuing state interference) and poorly motivated management (allied with weak incentive system) have resulted in the deterioration of profitability and economic efficiency in privatised firms. They contend that in order to realise the full benefits from privatisation, the state and its entities need to sell all of their shares to individuals and non-government affiliated institutional investors.

The following two studies examine the effect of ownership changes on either accounting performance or stock market valuation of privatised firms in China without employing MNR methodology, and both studies exhibit different results from Chen et al (2000). Xu and Wang (1997) investigate whether ownership structure in terms of ownership concentration and ownership mix[30] has significant effects on the performance of listed firms for the years 1993, 1994 and 1995. They employ market-to-book ratio (MBR), return on equity and return on assets to measure firms' performance. They suggest that few of the Chinese listed firms issue debt securities, it is almost impossible to estimate the market value of the firms' debt, therefore they employ market-to-book ratio (MBR) – market value of equity to book value of equity as the replacement of Tobin's Q. But it is also arguable that MBR may not be a good performance measure. As documented by Xu and Wang (1997), the turnover ratios of the Chinese stock exchanges are extremely high, for example, over 200% at both exchanges (Shanghai and Shenzhen) in 1994, as compared to 67% in the US; in addition, the average holding period in China is about 1 to 2 months, while it is 18 months in the US. This is a strong indication that it is very hard to justify that the MBR is a good performance benchmark if the market is so volatile. They also examine the relationship between performance proxies and concentration ratios (top five and top ten shareholding), ownership structures (state, private and foreign ownership) as well as other explanatory variables such as sale size, debt assets ratio, and growth rate of net income, industry etc. to identify the role of ownership structures in a firm's performance. The potential problem in their

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[30] Ownership concentration is the sum of the squares of the top 10 shareholdings, regardless type of shareholders. Ownership mix is the actually shares hold by different types of shareholders.

regression analysis is the colinearity between firms' performance measures and explanatory variables such as sale, growth rate of net income etc.

Results from their empirical analysis show that ownership structure indeed has significant effects on the performance of listed firms.

- First, there is a positive and significant correlation between ownership concentration and profitability.

- Second, the effect of ownership concentration is stronger for firms dominated by legal person shareholders than for those dominated by the state.

- Third, firms' profitability is positively correlated with the proportion of legal person shares, but it is either negatively correlated or uncorrelated with the proportion of state shares and tradable A-shares held mostly by individuals.

- Finally, labour productivity tends to decline as the proportion of state shares increases.

Xu and Wang (1997) argue that the above results suggest the importance of large institutional shareholders in corporate governance and performance, the inefficiency of state ownership, and potential problems in an overly dispersed ownership structure. They argue that in OECD countries ownership and control rights are increasingly concentrated in the hands of financial and non-financial institutions. The driving force behind this trend seems to be related to the benefit of ownership concentration as a direct measure of corporate control, since concentration provides the investors with both the incentives and the power to monitor and control the management.

Empirically and theoretically, there are several potential problems in their study:

- The period under study has a high market turnover and speculation, leading to too much noise in share prices. The main performance benchmark is market to book ratio, which is vulnerable to volatile stock market.

- Firms with high legal person shareholding tend to have high market to book value ratio that may not be the result of the firms' real economic or accounting performance. It might instead be the result of autocorrelation in which individual investors look favourably on, and then to invest more in, firms with high legal

person shareholding. The reason might be that individual investors regard dominant state shareholding is disadvantageous in improving firm performance.

- The strong effect of legal person shareholders may not be the result of their monitoring, but as argued by Chen et al (2000), legal person shareholders may invest in profitable firms rather than motivating the firm's management to make firms profitable.

- Although Xu and Wang (1997) also employ return on equity (ROE) and return on assets (ROA) as performance proxies to offset the possible distortion of market to book value ratio of equity (MBR), the less strict and loose accounting procedures before 1997[31] weaken the credibility of ROE and ROA in measuring firms' accounting performance.

- Finally, their study has not answered the question of how much performance has been improved, but only the relationship between the ownership and performance for three specific years.

Tian (2000) examines the stock market valuation of 825 firms listed at the Shanghai Stock Exchange from 1994 to 1998. He traces down the ultimate shareholder with a direct holding larger than a certain threshold by examining pyramids, cross-shareholdings and reciprocal shareholding, and he finds the main difference of the firms listed on China's stock market from western modern firms is the dominance of the government shareholder. Since Tobin's Q is a highly regarded measure of corporate value, Tian (2000) employs Q, which is simplified Tobin's Q – the sum of market value of equity and book value of debt over book value of total assets instead of respective market value of debt and assets. He argues that Q includes some basic accounting information, but it is mainly based on market prices of shares because the market can capture the growth opportunity of a firm if the market is efficient. He also employs return on assets (ROA) to examine profitability. Interestingly, he finds that during the years under study, Q rises but return on assets falls, which may indicate that market value may not be a good performance proxy for listed firms if the stock market "bubble" exists.

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[31] All listed firms are obliged to publish their standard balance sheet, income statement and cash flow statement mainly based on International Accounting Standards.

The results show that firms without state shareholding perform significantly better than those with state shareholding in terms of market valuation on the stock market; firms where a non-state shareholder holds the most perform better than those with the state as the largest shareholder; and firms with a non-state majority shareholder perform better than those with the government majority shareholder. This implies that the overall role of the government shareholder is detrimental in terms of corporate value, and Tian (2000) concludes that the finding of the overall detrimental impact of the government shareholder supports full privatisation. The question arises here is whether the state actually exercises its control rights over listed firms.

Tian (2000) also finds that corporate value decreases with the fraction of smaller state share-holdings but rises when the government is a larger shareholder – he regards this as the grabbing hand and helping hand of government. He argues that the finding of the U-shaped relationship between state shareholding and corporate value supports full privatisation and therefore he concludes the policy implication is to sell out state shares at one go rather than piecemeal at the firm level. This argument is particularly interesting but not particularly convincing in favour of full privatisation. If larger government shareholding increases firm value (ignoring measurement bias in the study), why did SOEs perform badly in the past when government wholly owned them before partial privatisation, and what is the rationale to privatise SOEs in the first place? The possible explanation for the findings of the government's grabbing and helping hands could be due to the fact that Tian (2000) employ Q to measure firm valuation and at the same time state shareholding has signalling effects in China's transitional context. Given the highly speculative stock market in China, small state shareholding may signal to investors or the stock market that potential managerial entrenchment and large institutional shareholder discretion would be significant and therefore private shareholders tend to downgrade firm value[32]. Similarly, large government shareholding may indicate to investors and the market that potential managerial entrenchment and institutional investor discretion tend to be

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[32] As discussed earlier, state, legal person and employee shares are non-tradable, and share price of a firm is based on tradable shares of the firm hold by private investors.

less significant and government would try to protect state assets. In this case, investors and the market tend to upgrade firm value. Therefore corporate market value may not be a good performance proxy to examine firm performance and the impact of ownership structures on firm performance.

4.2.4 Summary on China

Employing MNR methodology, Chen et al (2000) find performance deterioration in return on assets, return on equity and sales to assets turnover, but there is no significant improvement in return on sales and real sales which are further investigated in this thesis. The finding of the non-significant changes in real sales might be due to inadequate accounting rules resulting in low quality of accounting data before the introduction of new accounting rules based on International Accounting Standards in 1997[33]. Chen et al (2000) also find a significant reduction in debts and an increase in capital expenditures. In addition to the weakness in sample selection, Chen et al (2000) employ only ownership variables to conduct regression analysis but admit they fail to identify reasons for the deterioration in some profitability and efficiency measures. The reason might be that their analysis is based on the assumption that ownership changes could lead to corporate governance improvement automatically and subsequent performance improvement and they employ no corporate governance variables in their regression analysis. The failure in their analysis might indicate that the strong association between ownership structure change and corporate governance improvement in the free market economies may not be true in China where corporate governance has established from scratch and its improvement may not be quickly realised through ownership changes.

Regarding other two studies that employ non-MNR methodology, Xu and Wang (1997) mainly investigate the impact of ownership concentration and ownership mix on firm performance in terms of market-to-book ratio, return on equity and return on assets. Their findings indicate the importance of large institutional (legal person) shareholders in corporate governance and performance in an overly dispersed

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[33] They examine 275 share issue privatisation during 1991 and 1995 at both Shanghai and Shenzhen Stock Exchanges.

ownership structure. Their opinion of importance of institutional investors is not convincing: it is unclear whether the positive association between performance and ownership concentration of institutional (legal person) shareholders is due to better monitoring by institutional shareholders or the momentum of private investors on the presence of large legal person shareholders. The strong effect of legal person shareholding may not be the result of their monitoring because legal person shareholders may invest in profitable firms rather than motivating firms' management to make firms profitable. Therefore the above double effects might push up the market valuation of firms with high legal person shareholding. Tian (2000)'s study also shows the similar weakness to that of Xu and Wang (1997) by employing Q (simplified Tobin's Q) to examine the relationship between firms' market valuation and ownership structures. He suggests that the detrimental effect of state shareholdings on corporate value supports full privatisation. In fact it is not clear in his study whether state shareholding has a positive or negative effect on firms' accounting performance; and whether the impact of state shareholding on Q is due to the poor monitoring of state shareholder or signalling effect of state shareholding.

Therefore, current privatisation studies of share issue privatisation in China have suffered various shortcomings and further research is needed to clarify the actual post-privatisation versus pre-privatisation accounting performance changes based on more reliable accounting data, the determinants of such changes incorporating not only ownership variables but also incorporate governance variables. Behavioural theory might suggest that with information asymmetry, momentum investment is the favoured style especially in the stock market bubble period, therefore conventional analysis of the market value does not work. Obviously, given China's weak efficient financial market, it is stressed in the thesis that market related performance measures (e.g. market-to-book ratio, Q etc.) are not appropriate in studying privatisation in China's transitional context.

Nevertheless, there is a consensus in privatisation studies showing that privatised firms perform better than state-owned ones and partial privatised firms and

most researchers maintain that privatisation is necessary for significant performance improvements. Boardman and Vining (1989) argue that partial privatisation may not be the best strategy for a government wishing to move away from reliance on state ownership, and along with Boardman and Vining (1989), Ehrlich et al (1994), Megginson et al (1994), Tian (2000), Chen et al (2000), Dewenter and Malatesta (2001) and others, they advocate full privatisation of SOEs. As argued by D'Souza et al (2001), the pressing issue is no longer whether full privatisation leads to performance improvements, but rather why do these post-privatisation performance improvements occur. With regard to privatisation in China, the difficult question is whether full privatisation is the optimal strategy to privatise SOEs and to improve their economic performance, what are the exact performance changes after privatisation and what are the key drivers in firms' performance changes. These unsolved issues are the focus of this thesis and are further investigated in the following chapters.

4.3   Discussion

The consensus on share issue privatisation in China is that the supervision of enterprises through stock exchanges would strengthen the performance of SOEs. Despite some progress in the development of property rights, the absence of clear definitions of ownership has been an obstacle for enterprise restructuring and performance improvement in partially privatised firms. Meanwhile, China does not have the institutions in place to deal with the social costs of privatisation, such as asset stripping by insiders, and relies on free market principles to solve these problems. Therefore the present economic situation requires active steps in privatising SOEs.

Yarrow (1986) and Bishop and Kay (1989) argue that competition and deregulation are more important than privatisation in improving performance of firms. In addition to the positive role of concentrated ownership and large institutional shareholders, Xu and Wang (1997) suggest that competition and deregulation may be an alternative for privatisation to improve SOEs' profitability and efficiency. But their argument should be interpreted with caution because maybe with privatisation the

benefits of competition and deregulation will be even greater. Megginson and Netter (2000) points out that enterprise restructuring, concentrating on improving the allocation of property rights and incentives may yield large benefits even without privatisation. The question here is whether economic reform coupled with privatisation could lead to even greater performance improvement. There is limited empirical evidence, especially from China, to suggest that non-privatising reform measures, such as price deregulation, market liberalisation and increased use of incentives, can improve the efficiency of SOEs. But it also seems likely that these reforms would be even more effective if coupled with privatisation.

Responsible policy-makers in China are understandably reluctant to bet their economies on a rapid privatisation program without some assurance that all necessary prerequisite policies have been put into place. Since share offering has been China's major privatisation strategy, it is essential to examine whether those firms that went public in the past have gained economic efficiency after their partial share issue privatisation and identify obstacles in performance improvement. Vickers and Yarrow (1991) argue that what holds for a developed, market-based economy may not hold for a developing country, especially less for an economy emerging from decades of state control. Therefore the success or failure of privatisation is not only related to privatisation programme itself, but also often closely related to the function of a nation's institutional settings[34] and economic environment as a whole. Until these institutional setting are identified and implemented and the interaction between various economic policy options are established, launching a large-scale privatisation program will eventually be possible in China.

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[34] Part of these issues are discussed in Chapter 2 (pp6) – corporate governance survey.

Chapter 5   Research Design & Methodology:
Methods, Sampling & Data Collection

This chapter will present the research methodologies be taken.

- Firstly the two traditional research paradigms – quantitative and qualitative research methods – will be discussed.

- Then the research methods employed in this thesis will be presented, evaluated and assessed.

The intended audience of this research includes all the relevant groups of policy-makers or decision-takers in government agencies, managers in the public and private sectors, and investors. The findings of the effect of partial share issue privatisation on firm performance in China should provide valuable guidance to government officials, domestic and foreign investors, SOE managers and financial economists or researchers inside and outside China.

5.1   Quantitative and Qualitative Research Methods

Both quantitative and qualitative research methods are considered in this thesis.

5.1.1 Quantitative Research Method

Bryman (1990) suggests that quantitative research is often conceptualised by its practitioners as having a logical structure in which theories determine the problems to which researchers address themselves in the form of hypotheses derived from general theories. These hypotheses are invariably assumed to take the form of expectations about likely causal connections between the concepts that are the constituent elements of the hypotheses. Warshay (1975) further suggests that quantitative research tends to comprise the examination of concepts, which are hardly derived from some prior theory. He argues that literature review about previous research in relation to a particular concept or cluster of concepts, which is a standard precursor to the presentation of the results of a piece of quantitative research, is often used as substitute for a prior body of theory.

Therefore, hypotheses, when constructed, are often not derived from a theory as such but from a body of literature relating to a concept.

There is growing empirical evidence documenting post-privatisation performance improvements and how privatisation affects a firm's financial and operating performance within the wide spread of privatisation programmes around the world, including those in transition economies. In fact there is no general theory in privatisation study, but some concepts have been established in previous research in relation to the effects of privatisation on firms' financial performance world-wide, and most research document that privatisation does improve firms' financial performance. Hence, these concepts are seen as major focuses and the point of departure for this thesis.

Quantitative research is associated with a number of different approaches to data collection, such as secondary data, survey and experimental data collection. In this thesis, secondary data such as accounting data and stock market share price data are collected to examine firms' financial performance; survey data are collected to examine firms' corporate governance change after partial share issue privatisation.

5.1.1.1 Secondary Data Analysis

Bryman (1990) regards secondary analysis as the re-analysis of data collected by other researchers or organisations. It offers the advantages of speed and relatively low costs compared to other types of study, and the ground to be covered can be specified fairly precisely before the project is started. The disadvantage is that the scope and depth of the study will be constrained by the material already available. Since the reliability of accounting data in transition economies is highly arguable, the selection of the sample and when the data were published will be carefully considered in order to achieve maximum reliability. In addition, in social sciences, business issues like corporate governance cannot be fully explained by financial data, therefore further survey study seems necessary.

5.1.1.2 Survey Study

Kerlinger (1964) suggests that survey research is typified by the collection of data from a population, or some sample drawn from it, to assess the relative incidence, distribution and interrelationships of naturally occurring phenomena. Bryman (1990) regards survey research as the collection of data on a number of units and usually at a single juncture in time, with a view to collecting systematically a body of quantifiable data in respect of a number of variables which are then examined to discern patterns of association. Apparently, the emphasis on quantification, on variables and on sampling from populations shows how survey research shares a basically similar scientific nature of experiment research.

Yin (1994) argues that it is advantageous when the research goal is to describe the incidence or prevalence of a phenomenon or when it is to be predictive about certain outcomes. Robson (1996) further suggests that it may be that in non-laboratory situations where experiments are often neither feasible nor ethically defensible, surveys give that reassuring scientific ring of confidence. In this thesis, the set goal is to examine the prevalence of corporate governance change in partially privatised firms, and seek to predict the effect of IPO on corporate governance of partially privatised firms as a whole.

But Robson (1996) argues that on the one hand, there is a problem of internal validity where the survey questions are either incomprehensible or ambiguous, or where valid information about respondents and what they are thinking, feeling or whatever cannot be obtained. On the other hand, if the sampling is faulty, external validity cannot be achieved and the failure in generalising research findings is unavoidable. Finally, lack of relation between attitude and behaviour of respondents is another cause of failure to achieve external validity. Therefore the survey questions and their ordering are carefully designed and samples are carefully selected from the population to overcome the problems of internal and external validity. Robson (1996) suggests that reliability can be

achieved by presenting all respondents with the same standardised questions, carefully worded after piloting. It is then possible to obtain high reliability of response.

A survey can try to deal with phenomena and context, but its ability to investigate the context is extremely limited in terms of limited numbers of variables to be analysed. Because phenomenon and context are not always distinguishable in real-life situations, the data collection and analysis strategies need to be added by quality method such as case study. Therefore, a survey might be complemented by a small number of case studies to either confirm the findings or throw further light on the associations found in the survey study and provide analytic generalisation.

5.1.2 Qualitative Research Method

Bryman (1990) suggests that the most fundamental characteristic of qualitative research is its express commitment to viewing events, action, norms, values, etc. from the perspective of the people who are being studied. In other words, it refers to an approach to the study of the social world that seeks to describe and analyse the culture and behaviour of humans and their groups from the point of view of those being studied. The methods of data collection associated with qualitative research involve participant observation, unstructured interview, group discussion etc. In this thesis, semi-structured interview is employed to investigate the effect of IPO on corporate governance practice in newly privatised firms.

5.1.2.1 Case Study

Robson (1996) defines case study as a strategy for doing research, which involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence. Valsiner (1986) claims that the study of individual cases has always been the major (albeit often unrecognised) strategy in the advancement of knowledge about human beings. In a similar vein, Bromeley (1986) maintains that 'the individual case study or situation analysis is the bed-rock of scientific investigation'. Case study contributes uniquely to our knowledge of individual,

organisational, social and political phenomena. Yin (1994) regards case study as advantageous when a 'how' or 'why' question is being asked about a contemporary set of events over which the investigator has little or no control, and when the focus is on a contemporary phenomenon within some real-life context.

Given the dynamic of economic development in China's transitional economy, in depth case studies are required to find out the effects of IPO on corporate governance and management, the reasons why financial performance changes in a certain direction and how corporate governance change affects firms' post-privatisation performance. The unique strength of case studies is their ability to deal with a full variety of evidence – documents, artefacts, interviews and observations. The two sources of evidence - direct observation and systematic interviewing – can be achieved through in depth case studies. In addition, firms' documents are used to enrich the findings of the case studies.

One concern about case studies is that they provide little basis for scientific generalisation. Yin (1994) argues that like experiments, case studies are generalisable to theoretical propositions and not to populations or universes. In this sense, case studies like experiments do not represent a sample, and researchers' goal is to expand and generalise theories (analytic generalisation) instead of enumerating frequencies (statistical generalisation).

5.1.3 Combining Qualitative and Quantitative Methods - Triangulation

Denzin (1988) defines triangulation as the 'combination of methodologies in the study of the sample phenomenon. Many researchers believe that quantitative and qualitative research are simply denotations of different ways of conducting social investigations which may be conceived as being integrated; in other words, they are simply different approaches to data collection. Hakim (1987) argues that quantitative and qualitative research are different ways of conducting research and that the choice between them should be made in terms of their appropriateness in answering particular research questions. Jick (1979) also suggests that qualitative and quantitative methods should be

viewed as complementary methodologies; and for the organisational researcher, this would involve the use of multiple methods to examine the same dimension of a research problem.

Through combining quantitative and quantitative and qualitative methods, this thesis tends to answer the question of the effect of IPO or partial share issue privatisation on firm performance, which can be achieved through combined methods by:

- Evaluating firms' performance change through financial data analysis;
- Examining the determinants of firms' performance changes after IPO and the relationship between firms' post-IPO share price return and accounting performance through financial data analysis.
- Examining the effect of IPO on corporate management and corporate governance through survey study and case study analysis.

5.2   Research Methods

5.2.1 Secondary Data Analysis

Firstly, MNR (Megginson, Nash & van Randenborgh) methodology will be discussed; then five major methodological problems such as time period to be studied, sources of data, defined variables, unit of measurement, testable predictions and regression models will be demonstrated accordingly.

5.2.1.1 Design Comparative Studies – MNR Methodology

As mentioned earlier, there are two representative methodologies in testing the benefits of private as opposed to state ownership of firms, and MNR methodology is one of them. Megginson, Nash and Van Randenborgh first employed MNR methodology in their international empirical analysis of the performance of newly privatised firms. Megginson et al (1994) compare the pre-privatisation and post-privatisation financial and operating performance of 61 companies from 18 countries that experienced full or partial privatisation through public share offerings during the period 1961 to 1990, and document strong performance improvements in a given firm's operations following

privatisation. This methodology is subsequently widely employed by other researchers in privatisation studies, including Boubakri et al (1998), Chen et al (2000), D'Souza et al (2001) and Dewenter et al (2001). Because the comparisons are drawn between pre-privatisation and post-privatisation financial performance of the same group of firms, only one (matched) sample has to be selected. On the other hand, the competing methodology is the one employed by Boardman and Vining (1989), who examine the economic performance of the 500 largest non-US industrial firms in 1983 through comparing the performance of government-owned to privately owned companies. The results show that state-owned and mixed (state and private) ownership enterprises are significantly less profitable and productive than are privately owned firms. Because the comparisons are drawn between state-owned, mixed and private-owned firms, three independent samples have to be selected.

So, which methodology should be employed in this thesis?

In comparative sample studies, there is often the opportunity to choose between two alternative designs called independent samples and matched samples as mentioned above. In principle one would like to choose the design that, for given cost, leads to smaller sampling errors. Neter (1988) suggests that the matched-sample method will lead to a smaller sampling error. The general principle is that if the observations before and after (certain event) are positively related, the method involving matched observations will lead to smaller sampling errors than the use of the independent sample. Matched samples need not always involve the same sample elements; elements with similar characteristics may be paired in advance of the experiment. Therefore, MNR methodology seems advantageous technically because it uses a matched sample to investigate the effect of IPO on firm performance.

One may argue that Boardman et al's methodology is advantageous because it directly compares state-owned firms with comparable privately owned firms. But the most obvious challenge with this methodology is the difficulty in setting the proper

benchmarks to choose private firms that are comparable with state-owned firms. In the context of China, state-owned firms generally are larger in terms of firm size, employment and investment etc., while privately owned firms are generally smaller given the new growing private sector. In addition, the law does not require the disclosure of financial information of private firms. Article 2 of Company Law[35] states that "The term 'company' as mentioned in this law refers to a limited liability company or a joint stock limited company...". Since private firms are mainly sole ownership or partnership, they are not regulated by Company Law. Financial information disclosure is only required for public listed firms and it is regarded as highly confidential for private firms and in principle not accessible for general public. All these factors suggest that Boardman et al's methodology is practically not feasible in the study of China.

But Frydman et al (1997) argue the 'historical' approach of MNR can suffer from the difficulty of sorting out a potential variety of causal factors. Pre- vs. post-privatisation performance comparisons are more meaningful if they involve privatisation programmes through which significant numbers of state companies are transferred to the private sector. Such programmes, however, usually come as part of broader shifts in economic policies, often including, in addition to privatisation, such changes as tighter financial discipline and a reduction in subsidies. As a result, it is difficult if not impossible to separate the effect of new ownership from the impact of the new policies. Moreover, traditional privatisation programmes frequently involve significant injections of funds into firms to be privatised and are usually preceded by extensive preparation during which management and organisational structures are revamped. The impact of this preparation may well account for some of the post-privatisation performance improvements and clouds the impact of ownership change on firm performance (Frydman et al 1997). Following the same line, Vickers and Yarrow (1991) argue that some of the difficulties facing empirical analysis must be noted, such as the difficulties in distinguishing between the effects on efficiency of changes in ownership, competition

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[35] Company Law of the People's Republic of China (1993).

and regulatory policies. In China, organisational reconstructing is required for all firms before going public with tighter financial discipline and reduction in subsidies, which are essential steps for SOEs to go public because historically modern corporation structure and financing structure were not in place in Chinese SOEs. These pre-IPO policies are essential elements of the newly introduced corporate governance, such as board of directors and financing structure etc. Therefore the effect of these new policies is just one important part of the effect of IPO on firms' corporate governance practice.

Megginson et al (2000) suggest that studies employing MNR methodology have two key advantages. On the one hand, since they focus on post-IPO versus pre-IPO performance changes of firms privatised through share issue privatisation, they can examine and directly compare large samples of economically significant companies, from different industries, privatised in different countries, over different time periods. On the other hand, because each company is compared to itself (post- versus pre-privatisation), using simple, inflation-adjusted sales and income data that produce results in simple percentages, this methodology allows one to efficiently aggregate multi-national, multi-industry results. In practice, this advantage can be a drawback because different countries have specific macro and micro economic conditions as well as different institutional settings[36]. It should be in caution to pool data from different countries together to conduct cross-country analysis, but this is less relevant in a single country study. A single country study can overcome the problem of various accounting standards and practice in different countries, but the amount and quality of information disclosed can only be based on current practice in that country, especially in transition economies, where the disclosure of financial information is a new phenomenon. Furthermore, the possibility of sample selection bias can arise from several sources, including the desire for governments to make privatisation "look good" by privatising the healthiest companies first.

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[36] Most important of these is that accounting standards and practice differ in different countries, which directly affects the comparison of firm performance.

Megginson et al (2000) also admit that there are difficult methodological problems with research in privatisation study. One important problem is that of data availability and consistency. The amount of information that must be disclosed is much less in most countries than in the United States, and these standards vary from country to country over time. A large literature in accounting has shown that management can manipulate U.S. accounting data, and this problem is probably greater for international companies, as well as those in transition economies. In this thesis, it must be emphasised, firstly, accounting information quality is improved by selecting IPO firms in desired listing years. Secondly, the sample firms do not necessarily represent all SOEs national wide, but only those listed at domestic "A" share market, which is the major platform for SOEs to go public. In addition, no matter what performance these SOEs used to achieve, the main focus of the thesis is on to what extent that IPO or share issue privatisation has an impact on firms' overall financial performance and corporate governance.

Galal et al (1992) and Barberis et al (1996) suggest that there are also many problems in measuring performance changes that arise from using accounting or stock data, including determining the correct measure of operating performance, selecting an appropriate benchmark with which to compare performance, and determining the appropriate statistical tests to use. Finally, Megginson et al (2000) suggest that the finance literature has not reached a consensus on the ways to deal with these problems for U.S. companies, much less for privatised international companies. Therefore, the results of each of the studies must be kept in perspective. The above view provides strong arguments for choosing a proper methodology in a specific country study in terms of determining performance measurements, selecting comparison benchmarks, and performing statistical tests accordingly.

In sum, technical and practical considerations lead to the conclusion that MNR methodology will be employed to examine pre- versus post-IPO financial performance change of listed firms.

5.2.1.2 Sampling

This thesis limits the analysis to those firms that went public through share issues in 1997 and 1998 at the Shanghai Stock Exchange A share market.

(1) Sampling Strategies

Sample selection is the first crucial step towards data collection, in which proper sampling strategies should be developed.

- **Share Issue Privatisation**

Firstly, share issue privatisation (SIP)[37] is the main privatisation method in China. There are a few private sales, which are basically in fact government arrangements to transfer assets and employees of one SOE to another, not private sales in the developed markets. In China, the large and most economically significant SOEs are partially privatised through share issue[38], not through private sale. Megginson et al (1994) argue that firms sold publicly are by far the most visible and politically sensitive of all privatisations, and it is the public's perception of their post-divestment operating performance that will determine whether the entire privatisation programme is judged a success or a failure. The Chinese government prefers SIP to private sales because SIP offers the chance to test the results of partial privatisation[39] and then can subsequently boost both government and pubic confidence in privatisation.

- **Shanghai Stock Exchange's A Share Market**

Shares are classified as domestic (A share) and foreign (B share, H share, N share and L share) by the shareholder's residency, in which the first targets domestic investors with Chinese Yuan as the trading currency and the others target foreign investors with foreign currencies as the trading currency. The A-share market is the main platform for Chinese SOEs to go public, and there are rare cases where foreign investors invest in the

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[37] Share Issue Privatisation (SIP) is interchangeable with Initial Public Offering (IPO) in this thesis.

[38] China Security Regulation Committee (CSRC) website: http//www.csrc.org.cn

[39] This gradual approach did gain wide support among public at the early years of SIP programme but not in recent years because of listed firms' poor financial performance and corporate governance.

domestic A share market as legal person shareholders. For the B-share market, just 54 firms listed till the end of 1998 at the Shanghai Stock Exchange, and no firm went public in 2001 and 2002. The following table 5.1 shows the number of firms that went public over the years 1991-98 in both the A-share and B-share markets at the Shanghai Stock Exchange.

Table 5.1 Number of Companies Listed at the Shanghai Stock Exchange

This table presents the number of Chinese companies that went public in the A-share and B-share market over years till the end of 1998 at the Shanghai Stock Exchange.

	Total	91	92	93	94	95	96	97	98
A-Share	423	7	22	71	67	15	103	85	53
B-Share	54	--	9	12	12	2	6	8	2

For overseas listings, there are just a few firms listed in Hong Kong, the US, London and Singapore. The following table 5.2 shows the numbers of firms that went public outside Mainland China till year-end of 1998.

Table 5.2 Number of Chinese Companies Listed Overseas

This table presents the number of Chinese companies listed overseas till the end of 1998 at HKEx** (including dual listed at LSE**, NYSE** and NASDAQ**), and solely listed at NYSE** and SES**.

	Total	92	93	94	95	96	97	98
HKEx *	41	--	6	9	2	6	16	2
NYSE (solely listed)	1							1
SES (solely listed)	1			1				

*	Of 41 firms, 8 firms are dual listed in the US as American Depository Receipts (ADRs), 2 firms are dual listed in London as GDRs.
**	HKEx: Hong Kong Exchange
	LSE: London Stock Exchange
	NYSE: New York Stock Exchange
	NASDAQ: National Association of Securities Dealers' Automated Quotation
	SES: Stock Exchange of Singapore

Sources: Datastream; China Securities Regulatory Commission (www.csrc.org.cn)

The main focus of this thesis is the A Share market because it is the major platform for Chinese SOEs to go public. There are two stock exchanges in China - Shanghai Stock Exchange and Shenzhen Stock Exchange – both have A share markets[40]. The latter has acted as a regional market since its establishment (and is becoming more national)[41] and the former has always acted as a national market since its establishment, so its listed firms are more representative nation-wide. Therefore the sample for this thesis will be selected from the Shanghai Stock Exchange A share market.

• Accounting Issues

Accounting regulation in China experienced a significant change in 1997. The newly introduced *Stock Company*[42] *Accounting Regulation* requires listed firms to provide standard financial statements[43] and this new accounting standard was put into effect on the 1st January 1998. The new accounting regulation can be seen as a Chinese version of International Accounting Standards but with Chinese characteristics due to different business practice. Listed firms are required to publish balance sheet, profit and loss account and other notes to the accounts and any statements of the principles or assumption on which they have been prepared in their financial reports. Coming into effect on the 1st January 2001, the *Stock Company Accounting Regulation* was further revised as *Enterprise*[44] *Accounting Regulation*, and cash flow statements are required for the public firms due to changes in business practice and the needs to meet the gap between Chinese accounting standards and IAS.

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[40] Cross listing between these two markets is not permitted.

[41] China Securities Regulatory Committee (CSRC) website: http//www.csrc.org.cn

[42] Stock company refers to those companies with limited liabilities, no matter they are listed on the stock exchange or not.

[43] The new accounting regulation is based on International Accounting Standard (IAS) and it was introduced in A share (domestic) market for the first time, while it was introduced in B share market in 1993, according to Financial Times International Accounting Survey 1999, David Cairns, LSE London.

[44] Enterprise refers to any stock company, which is set up in China, except small-scale businesses and financial insurance companies.

The accounting information based on new regulation is a crucial element in sample selection criteria. The accounting regulation change in 1997 made the financial reports published after 1997 fundamentally different from those published before 1997, with stricter accounting rules and better accounting information based on International Accounting Standards. Equally important, more recent years' information reflects better accounting practice and information disclosure in accordance with capital market development, corporate governance improvement and government legislation in China. Therefore three years pre-IPO accounting information published in IPO prospectus and post-IPO accounting information are all based on new conventions and more reliable after 1997, and comparable pre- and post-IPO accounting data can be collected. Consequently firms that went public from 1997 onwards will be chosen as potential sample firms.

- **The Amount of Accounting Information**

In order to evaluate the corporate financial performance change, the financial accounts of three years pre- and post-IPO are collected, and performance analysis includes the comparison between the average three years post-IPO performance and average three years pre-IPO performance. Given that sample firms must have at least three years post-IPO financial accounts till the end of 2001, firms that went public no later than 1998 fit this criterion. Therefore, the sample ends up with 85 and 53 firms that went public (A share) in 1997 and 1998 respectively at the Shanghai Stock Exchange, within which there is no dead or delisted firm.

(2) Main Sample

Shanghai Stock Exchange database provides only post-IPO financial accounts while Shenzhen Stock Exchange database provides both pre- and post-IPO financial accounts for firms listed at both exchanges. Within the 85 and 53 companies that went public in 1997 and 1998 respectively, financial accounts of 9 firms are not fully available from either database, and therefore these firms are excluded from data analysis. Crosschecking is conducted between the two databases during the data collection

process. Two firms' financial accounts in their respective years are not consistent in the two databases and they are excluded from the data analysis. Unfortunately, relevant annual reports of these 11 firms cannot be found. Excluding the above mentioned 11 firms, the sample under study finally ends up with 127 firms – which is called main sample in this thesis.

Table 5.3 Sector Distribution of the Main Sample Firms

	Total No.	Sector				
		Commercial	Industrial	Miscellaneous	Real Estate	Utility
Firms listed at Shanghai Stock Exchange 'A' share market till year-end 1998	423	48	248	84	9	34
Main Sample Firms	127	2	82	33	0	10

It is noted that there are just 2 firms from the commercial sector and none from the real estate sector in the main sample firms. As shown in table 5.3, the commercial sector accounts for a relatively small proportion of listed firms and there are just 2 firms in this sector listed during the period 1997-1998. Meanwhile, only 9 firms in the real estate sector are listed at the end of 1998 at the Shanghai Stock Exchange. The nearly absence of real estate firms is the result of that China's State Council banned the listings of real estate firms in 1993 amid rampant speculations in the property market (Hong Kong Trade Development Council 2001)[45]. Manufacturing firms have traditionally played a key role in China's economy and therefore they take the largest proportion of the listed firms.

(3) Minor Sample

Also, the original accounting dataset may be extended by the addition of data to provide a broader, objective and more comprehensive basis for the main sample firms' financial performance analysis and an overall assessment of findings on thesis questions. The IPO firms in the main sample have almost identical seven years of pre-IPO and post-IPO

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[45] On 15th January 2001, the CSRC put an end to the ban on listings by real estate firms.

performance window period, the question arising is whether the main sample firms' financial performance changes are the result of the economic cycle in that period or the effect of IPO. In order to confirm the existence of IPO effect, a further financial performance analysis of 100 non-IPO firms listed at the Shanghai Stock Exchange along with those IPO firms at the end of 1998 is undertaken to clarify whether these non-IPO firms perform differently from those IPO (main sample) firms. If non-IPO firms perform significantly differently from IPO firms during the similar seven-year window period, IPO is proved to have effect on firm performance. This sample of non-IPO firms is referred to as the minor sample throughout this thesis.

In selecting minor sample firms, main sample firms (IPO firms) are firstly excluded from all firms listed at the end of 1998. Then minor sample firms are selected from the firms left based on the following three principles. Firstly, the minor sample firms should cover the same proportion of sectors as those of main sample firms, and more specifically, the same proportion within industry classifications set by Datastream within each sector[46]. Secondly, firms should also have comparable sales size or asset size with those of the main sample firms. Thirdly, an effort is made to ensure that these firms cover a wide range of IPO years from 1991 to 1996 (main sample firms that went public in 1997 and 1998 are excluded) to improve their representativeness of the population.

Table 5.4   Sector Distribution of Main Sample & Minor Sample Firms

	Total No.	Sector				
		Commercial	Industrial	Miscellaneous	Real Estate	Utility
Main Sample Firms	127	2	82	33	0	10
Minor Sample Firms	100	2	65	28	0	5

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[46] Datastream does not assign sector classification for Chinese listed firms, instead, it uses five sectors defined by the Shanghai Stock Exchange.

The characteristics of main sample firms and minor samples at the end of 1997[47] are summarised in the following table 5.5.

Table 5.5 Statistics of Main Sample & Minor Sample Firms

This table summarises statistics of some basic characteristics of main sample (at the end of 1996/1997) and minor sample firms (at the end of 1996). SALES represents sales size, ASIZE represents asset size. CYm represents Chinese Yuan in millions (the exchange between UK pound and Chinese is 1:13 in June 2003) .

Main Sample	SALES (CYm)	ASIZE (CYm)	*Minor Sample*	SALES (CYm)	ASIZE (CYm)
Mean	646	825	Mean	732	1315
Median	312	384	Median	273	577
Std.D	1157	2238	Std.D	1482	2761
Min	33	78	Min	18	140
Max	8513	23042	Max	12203	19025
Valid Cases	**127**	**127**	**Valid Cases**	**100**	**100**

The statistics in table 5.5 show that main sample firms and minor sample firms are comparable with each other in terms of mean and median values of both sales size and asset size, given the same proportion of sector distribution shown in table 5.4 (pp90).

5.2.1.3 Data Collection

It should be made clear that financial accounts collected are those originally published immediately after the respective fiscal year, not subsequent adjusted accounts presented in the following year's financial reports. For example, if firms publish their 1998 financial reports in early 1999 for the fiscal year of 1998 (from 1st January 1998 to 31st December 1998), financial accounts in 1998 financial reports are recognised as original ones and are collected for data analysis. Many firms do make some adjustments to previous year's financial accounts at the time of publishing their current year's financial reports. Since it is very difficult to justify appropriateness of these adjustments, the

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[47] The post-1997 versus pre-1997 performance changes of minor sample firms are compared with post-IPO versus pre-IPO performance changes of main sample firms.

official database categorises financial accounts published in the respective fiscal year's financial report as original ones; not the subsequent amended ones in the following year's financial report.

(1) Data Sources

Datastream does not provide financial reports and accounting related ratios, such as price/earnings ratio (P/E ratio), but only historical share price for firms listed at China's two stock exchanges. Therefore firms' financial reports are collected from the Shanghai Stock Exchange database and the database company managed by the Shenzhen Stock Exchange. The Shanghai Stock Exchange database provides company financial reports only from 1998, which may indicate that Shanghai Stock Exchange regards later years' accounting practice and information, especially after the new accounting regulation, as more reliable than that for previous years. This strongly supports the rationale behind the sample selection procedures described above. In short, accounting data are obtained from the CSRC [48] authorised database provider-Shenzhen Stock Exchange database company - Shenzhen JuChao Information Services, Shanghai Stock Exchange database, company annual reports, Shanghai Stock Exchange YearBook and other relevant websites and data sources. Firm share prices, market information and sector classifications are obtained from Datastream. GDP data are obtained from Datastream.

(2) Missing data

For unknown reasons, some firms' data are not fully available from the stock exchange database. For the main sample (IPO firms), within the original 138 IPO firms, 9 firms' financial accounts are not fully available and as mentioned earlier, they are excluded from the main sample. There is no missing value in the financial accounts of the 127 main sample firms. For the minor sample (non-IPO) firms, all financial accounts are available and there is no missing value.

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[48] China Securities Regulatory Committee (CSRC) has functions similar to those of the U.S. Securities Exchange Commission (SEC).

(3) Data Checking

Errors in the database do appear. During the data collection process, crosschecking is conducted between the Shanghai Stock Exchange and Shenzhen Stock Exchange databases to identify whether any firm's financial accounts are presented differently. In fact 2 firms emerge with differences and therefore they are excluded from the main sample firms (IPO firms).

5.2.2 Survey Study
5.2.2.1   Sampling

The most concerns in survey study design are sampling and questionnaire design as well as proper ordering of questions. Samples should be representative of the population and a well-designed questionnaire could improve information collection. In this thesis, sample selection is based on three principles. Firstly, the sample firms should cover the same proportion of sectors as those of all listed firms in Shanghai Stock Exchange.

Table 5.6 Sample Firms Chosen for Survey Study

	Total	Sector				
		Commercial	Industrial	Miscellaneous	Real Estate	Utility
Firms listed at Shanghai Stock Exchange 'A' share market till year end 2000	557	57	340	103	10	47
Survey Sample Firms	243	26	143	48	2	24

Secondly, firms should be geographically located around China; in other words, sample firms should be concentrated on neither developed coastal areas nor under-developed western part. All sample firms spread around north, south, west and east of China covering the majority of provinces. Finally, sample firms should also cover all different IPO years (from 1991 till the end of 2000) to improve sample firms' representativeness in the population.

5.2.2.2   Questionnaire Design

Semi-structured questionnaire contains two parts: open-ended questions and close-ended questions.[49] Open-ended questions are designed to generate maximum information from the respondents and to encourage the respondents to express their own opinions freely without constraints of specific options provided in the questionnaires. Close-ended questions are designed to collect standardised answers. In addition, both open-ended and close-ended questions are designed not to be too sensitive to answer, or too ambiguous to draw the line and definition.

The questions are mainly corporate governance related issues and designed to be short so as to improve response rate. In the open-ended questions in part one, issues like purpose of going public, objectives of the firms, state influence after going public, firm level changes after going public and communication with financial community are presented. In the close-ended questions in part two, issues like assets and debt restructuring before going public, the role of board chairman and chief executive officer, executive turnover and performance-related pay are raised.

5.2.2.3   Data Collection & Limitations

Using a designed questionnaire, a simple sample survey was conducted to collect standardised data from a representative sample of 243 firms derived from all firms listed at the Shanghai Stock Exchange at the end of 2000. A pilot survey study was conducted in June 2001 with 28 randomly chosen firms to improve survey questions, but only 5 firms responded. The formal survey was conducted in July 2001, and the response rate was only 9%, in which within 243 firms, only 20 firms responded. Because of the low response rate, the data from survey study is summarised in appendix 13.1 (pp308) and 13.2 (pp317) as reference.

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[49] See appendix 5.2 (pp293-294) for survey questionnaires.

5.2.3 Case Study

Prior to any data collection, the decision must be made of how cases are going to be used to address research questions. Silverman (2000) suggests that five components of case study design are especially important, namely research questions, propositions, units of analysis, pattern matching and criterion for interpreting findings. In this thesis, the research question is how and why corporate governance changes after going public. The proposition is that, if there is a change in corporate governance, it may lead to change in performance. It is intended to find logic that links interview data to the propositions through pattern-matching and finally reach the successful interpretation of case study findings. A pilot study was conducted to reveal inadequacies in the initial design of case study questions. The flexibility of case study designs is in selecting cases different from those initially identified, not in changing the purpose or objectives of the study to suit the cases that were found.

5.2.3.1 Sampling

Sampling strategy was developed through the following steps. Firstly, cases were chosen from different regions in China – north, east and southwest – to make them more representative national-wide. Secondly, the wide range of listing years and various sectors are emphasised. One limitation is that there is a tendency for well performing firms to accept interviews, but not those badly performing ones.

5.2.3.2 Semi-Structured Interview Questions

The case study strategy was developed as semi-structured interviews with structured questions and open discussion. Semi-structured interview allows maximum data collection and focusing on questions under investigation, while open discussion allows interviewees to offer their valuable insights with maximum free information flow. In addition, company annual reports are used as references. The semi-structured interview questions[50] are based on three related issues: going public, the effect of IPO on corporate

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[50] See appendix 5.4 (pp296) for semi-structured interview questions.

management and the effect of IPO on corporate governance, and they are listed as follows:

1. *Going Public Issues:*

- What are the main changes resulting from going public?
- What is the major state influence on your firm, has there been a change in state influence after going public?

2. *The effect of IPO on Corporate Management:*

- What are the major challenges in improving financial performance? Any solution?
- Has the firm's asset quality improved? Any good experience or lesson?
- Has the firm's cash management improved? Any good experience or lesson?
- How does the firm conduct strategic management, investment and market research?

3. *The Effect of IPO on Corporate Governance:*

- Does the current corporate governance system work? Any solution?
- How do you evaluate the roles of independent supervisors and independent directors?
- How do you describe the relationship between the board of directors and shareholders (especially small and medium shareholders)?
- How does the firm communicate with the financial analysts and its shareholders (especially small and medium investors)?
- How do you evaluate performance-related pay and its design? Is there any practice in the firm?

These three issues are closely related, because IPO has effects on corporate governance and corporate management, and corporate governance change is an important factor in driving corporate management change. Consequently, when some effects of IPO on corporate governance cannot be observed directly, they can then be reflected through the

corporate management change. Therefore several corporate management related issues are also incorporated into interview questions.

5.2.3.3 Data Collection & Limitations

Case studies are typically based on two or more methods of data collection. The use of multiple sources of evidence allowed case studies to present more rounded and complete accounts of social issues and processes. The fieldwork for case studies may incorporate the analysis of administrative records and other documents, in-depth interviews, participant and non-participant observation and collecting virtually any type of evidence that is relevant and available. Prior to the interviews, faxes with the attached structured questions were sent out to the targeted companies, and normally senior executives were asked for an hour interview, in which some structured and informal questions would be asked. According to actual circumstances and time available, executives could also discuss other issues in which they were interested after the scheduled interview.

The original interview data were firstly transcribed into Chinese, and then translated into English. In order to achieve minimum loss of information, a further crosschecking between English and Chinese transcripts was conducted and the final transcripts came into being. There are some considerations in data collection. There may be large blocks of missing data which present serious problems for further analysis if interviewees are not familiar with some specific firm issues. For reasons of confidentiality, some information revealed during interview may not be allowed to be revealed to a third party or be produced in any written form.

The characteristics of the 16 firms interviewed are summarised in the following table 5.7.

Table 5.7   Characteristics of the Sixteen Cases

This table summarises the characteristics of the 16 firms interviewed, including company code used in this thesis, year of going public, industry classification defined by Datastream, Sector defined by Datastream. ASIZE and SALES represent asset size and sales size at the end of 2001 respectively. ST, LP, PLC and EMP represent state, legal person, private and employee shareholding respectively.

Code*	IPO (Year)	Industry Classification (Datastream)	Sector** (Datastream)	Interviewee(s)*** (Job Position)	Location (Headquarter)	ASIZE (CYm)	SALES (CYm)	ST (%)	LP (%)	PLC (%)	EMP (%)
BS	12/12/00	STEEL	IND	BS	Shanghai	58042	29170	85%		15%	
DOFE	03/07/97	AUTOMOBILE	IND	BS	Shanghai	877	600	75%		25%	
SAUTO	25/11/97	AUTO PARTS	IND	BS	Shanghai	10054	3705	70%		30%	
DOFA	12/07/00	INVESTMENT BANKS	COM	CLA	Shanghai	2081	2698	74.03%	0.97%	25%	
CDS	07/08/97	RETAILERS, MULTI DEPT	COM	BS	Chengdu	964	1413	65.38%	9.47%	25.16%	
TIKE	11/01/01	CHEMICALS, SPECIALITY	IND	CEO, COO & BS	Chengdu	521	142	55.5%	5.6%	38.9%	
DOHA	06/06/96	NON-FERROUS METALS	MIS	CEO (Chairman)	Shanghai	1241	199	44.2%	19.4%	36.4%	
BL	24/09/98	ELECTRONIC EQUIPMENT	IND	COO	Shanghai	1540	783	38.5%	25.6%	35.9%	
MF	18/12/96	TEXTILES+LEATHER GDS	IND	CEO	Shanghai	545	210	30.4%	41.1%	28.5%	
B-RAY	15/11/95	ELECTRICAL EQUIPMENT	IND	CEO	Chengdu	374	277	14%	53.8%	32.2%	
MS	19/12/00	INVESTMENT BANKS	MIS	CFO	Beijing	138898	5130		79.77%	20.23%	
CJ	15/01/98	INVESTMENT COS.(6)	MIS	BS	Shanghai	806	471		68%	32%	
DAHE	29/11/00	ELECTRICAL EQUIPMENT	IND	BS	Beijing	1251	1347		64.28%	35.72%	
DIKA	12/02/01	PHARMACEUTICALS	IND	BS	Chengdu	751	94		60.75%	39.25%	
CYT	03/12/97	AIRLINES + AIRPORTS	MIS	CE	Beijing	1740	1308		56.18%	43.82%	
GUDO	24/05/01	HOUSE BUILDING	IND	CEO	Chengdu	1295	341		52.9%	40%	7.1%

*   Company code used in case analysis.

**   Sector is defined as commercial (COM), industrial (IND), miscellaneous (MIS), utility and real estate.

***   CE: Chief Economist; CLA: Chief Legal Advisor; BS: Board Secretary; CEO: Chief Executive Officer; COO: Chief Operating Officer.

Sources: Datastream, Shenzhen and Shanghai Stock Exchanges.

5.2.3.4 Data Analysis

Since the cases studies are based on semi-structured interview questions, the general pattern is not difficult to detect and the data are characterised as three main topics: going public issue, the effect of IPO on corporate management and the effect of IPO on corporate governance. The detailed case study transcripts are written following these three topics, and the main themes are identified for further analysis, which will be further discussed in case study analysis in chapter 11 and chapter 12.

5.3 Summary

This chapter presents the details of the research methodologies employed in this thesis. Firstly the two traditional research paradigms – quantitative and qualitative research methods – are discussed. Then the research methods employed in this thesis are presented, evaluated and assessed. In secondary data analysis, MNR methodology, sampling and data collection are discussed. In survey study, sampling, questionnaire design, data collection and limitations are discussed. In case study, sampling, semi-structured interview questions and data collection and limitations are discussed. Because of the low response rate, the results from the survey studies are summarised in appendix 13.1 (pp308) and 13.2 (pp317) as reference.

Next chapter further demonstrates detailed methodologies used in hypotheses testing, performance change analysis and regression analysis.

Chapter 6   Research Design & Methodology: Hypotheses Testing, Performance Change Analysis & Regression Analysis

This chapter further demonstrates the methods employed in hypotheses testing, performance change analysis and regression analysis.

6.1   Performance Proxies

Before conducting hypothesis tests, performance proxies are categorised as fundamental and supplementary performance proxies.

- Fundamental performance proxies are based on accounting performance measures and are available for both pre-IPO and post-IPO years.

- Supplementary performance proxies include both accounting and market performance measures that are available for only post-IPO years since cash flow statements and share price data are available for only post-IPO years.

In order to compare post- versus pre-IPO performance changes, performance proxies must be examined. Firstly, fundamental performance proxies are defined, and then supplementary performance proxies in terms of cash flow and share price related performance measures are also defined and the choice of performance proxies in other studies is further discussed. Secondly, in order to test whether post- versus pre-IPO performance changes are significant or not, testable predictions are presented, and specific hypothesis test methods are evaluated and explained.

6.1.1 Fundamental Performance Proxies

Following Megginson et al (1994) methodology by comparing pre- and post-IPO firms' performance, performance proxies employed are profitability, output and leverage measures, in which profitability is measured by return on sales, return on assets and return on equity; output is measured by real sales and leverage is measured by total debt and long-term debt ratio. All these performance proxies are widely employed in privatisation studies, such as Megginson et al (1994), Xu et al (1997), D'Souza et al (2000), Chen et al (2000) etc.

- Profitability

In terms of profitability measures, return on sales, return on assets and return on equity are three basic and well-recognised profitability measures in finance literature.

- Output

Output is measured by deflated and normalised nominal sales; in other words, each year's nominal sales are deflated by the respective year's consumer price index and normalised by the firm's real sales on the year of IPO. The purpose of deflation and normalisation is to improve comparability of each year's real sales. Megginson et al (1994) argue that better incentives, more flexible financing opportunities, increased competition and greater scope for entrepreneurial initiative after going public could lead to increased real sales. But one may argue that unlike profitability measures, real sales may not be a meaningful performance measure in that it is an absolute measure, and small firms may generate low sales and large firms may generate high sales. The reason for choosing this absolute measure is that Chinese SOEs used to emphasise output in the past, so output might be regarded as a straightforward performance indicator for newly listed firms. Meanwhile, because this performance measure is simple and straightforward, unsophisticated private investors may depend on it to guide their investment in the stock markets. This question will be further investigated through a regression analysis of firms' post-IPO stock market performance against post-IPO accounting performance in chapter 10.

- Leverage

Leverage is measured by total debt (LEV1) and long-term debt ratios (LEV2). On the one hand, concern should be put on firms' long-term debt since it is a reflection of debt management policy, while short-term debt is constantly changing and it is more or less a reflection of trade practice in the short run. Traditionally Chinese SOEs are highly long-term debt financed; therefore it is valuable to examine firms' financing structure after IPO. Megginson et al (1994) suggest that SOEs' high debt level is at least in part

because they can not sell equity to private investors, and thus the only forms of "equity" available to SOEs are capital injections from the government and retained earnings.

- Liquidity

Because most firms are facing challenges of cash management[51] and in a situation of either shortage of cash or with a large amount of cash in hand but without good investment projects after IPO, it is important to examine the short-term solvency in terms of liquidity. Two liquidity ratios are examined: quick ratio and net working capital to total assets. Regarding quick ratio, inventory is often the least liquid current assets, and some firms may be overstocked by large inventories. Relatively large inventories are often a sign of short-term trouble in terms of overbuying or overproduction. Net working capital is also frequently viewed as the amount of short-term liquidity a firm has and low value indicates low liquidity.

- Operating Efficiency

In line with the argument in Chen et al (2000), employment related efficiency measures such as sales efficiency are not examined as lack of employment data in Chinese listed firms. Instead, Chen et al (2000) employ sales to asset turnover to measure sales assets efficiency. Therefore, sales assets turnover is employed in this thesis to examine firms' operating efficiency. Chen et al (2000) also point out that changes in dividends, which are investigated in other studies, are not examined as very few Chinese SOEs paid dividends prior to the IPOs. For the same reason, dividend payout measures are not employed in this thesis.

6.1.2 Supplementary Performance Proxies

Firms' cash flow statements are a newly added requirement in new accounting regulation and they are only available since 1998, in other words, only available for

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[51] This will be further discussed in case study analysis in Chapter 11 (pp222) and Chapter 12 (pp240).

main sample firms' post-IPO years. The cash flow related and share price related performance measures are defined as supplementary performance proxies.

- Accounting Performance Proxies

Supplementary accounting performance proxies include two capital expenditure related measures – capital expenditures to assets and capital expenditures to sales. They are employed by D'Souza et al (2001) and also employed in this thesis to examine capital expenditure during firms' post-IPO years.

Andrade & Kaplan (1998) investigate the cost of financially distressed firms, and they employ cash flow margin (net cash flow/total sales) as one of their quantitative operating performance measures. In accounting practice, net cash flow generation is the main indicator of a firm's financial health and Chinese listed firms do have problems in generating cash from their businesses[52], and therefore cash flow margin is taken as an important performance measure of firms' cash efficiency for post-IPO years.

- Market Performance Proxies

Supplementary market performance proxies refers to firms' stock market performance measures which include market to book ratio (MBR), price-earning ratio (PE) and share price return (Re). Market to book value ratio (MBR) is a firm's market value of equity divided by book value of equity. In other words, it is the share price on the last trading day of each year times the number of total outstanding shares on that day, and then divided by book value of equity. Originally, Tobin's Q, the market value of debt plus the market value of equity divided by the replacement cost of total assets, has been used as a major indicator of firm performance. As Xu and Wang (1997) point out, since there are few Chinese listed firms issue corporate bond, it is almost impossible to estimate the market value of firms' debt. Therefore Xu and Wang (1997) employ MBR as a substitute for Tobin's Q to measure firms' performance. Because book value of equity is an accounting number and reflects historical cost of equity, market to book value ratio

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[52] Evidence are presented in Chapter 11 (pp222).

(MBR) in fact compares the market value of a firm's investment to its cost. A ratio lowers than one means that the firm has not been successful overall in creating value for its shareholders. Price-earning (P/E) ratio is defined as price per share divided by earning per share, which measures how much investors are willing to pay for the current earnings for each share. Higher price earning ratio means firms have significant prospects for future growth; or very low earnings; or even investors' over-optimism towards market or firm performance. Share price return (Re) is the difference of share price on the last trading day and the first trading day of each year, plus dividend payment, and then divided by share price on the first trading day. Share price returns are firms' real stock market performance for a given year, while market to book value ratio and price-earning ratios are mixtures of market and accounting performance measures in that they incorporate both firms' stock market performance and accounting performance – share prices with book equity and earnings.

6.1.3 Discussions

(1) Accounting and Market Performance Proxies

Fundamental performance proxies employed incorporate widely used accounting performance measures in most privatisation studies and other relevant finance literatures, taking into account availability of data and the nature of the questions to be answered in this thesis.

Due to data constraints, some accounting and market performance proxies are available only for the post-IPO period and are defined as supplementary performance proxies. There are two purposes in examining supplementary performance proxies. Firstly, to identify if firms' post-IPO market performance in terms of market to book ratio, price earning ratio and share price return are consistent with firms' post-IPO accounting performance (including those accounting performance measures in fundamental performance proxies). Secondly, to further explore the relationship between share price return (Re) and all post-IPO accounting performance proxies mentioned above in order

to identify which accounting performance proxies are mostly closely reflected in the share price return (Re).

(2) Performance Proxies for the Chinese Firms

As mentioned in the privatisation survey (Chapter 4), there are three main privatisation country studies on China, by Xu and Wang (1997), Chen et al (2000) and Tian (2000). Chen et al (2000) mainly follow Megginson et al's (1994) methodology by employing accounting performance measures, while the other two adopt different approaches. As mentioned earlier, Tobin's Q, the market value of debt plus the market value of equity divided by the replacement cost of total assets, has been used as a major indicator of firms' performance. Tian (2000) uses simplified Tobin's Q, which is called Q to replace Tobin's Q as a measurement of firms' performance to explore the relationship between firms' value and ownership structures. Q is defined as the sum of market value of equity and book value of debt over book value of total assets. Xu and Wang (1997) employ market to book ratio (MBR) to replace Tobin's Q as major measurement of firms' performance to explore the relationship between firms' performance and ownership structures. MBR is defined as a firm's market value of equity divided by book value of equity[53].

Both Q and MBR incorporate market value of equity, namely, share price information of firms' equity. Estrin et al (1999) argue that MBR relies on the market valuation of the firm and hence the expectation of the financial markets. Its reliability is dependent upon financial markets being fairly well developed. Given under developed Chinese stock markets, both MBR and Q are obviously not reliable as performance indicators. Therefore it would be arguable to employ them as firms' performance proxies and even further explore their relationship with ownership structure changes.

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[53] In other words, market to book value ratio is firm's share price on the last trading day of each year times the firm's total number of outstanding shares and then divided by the firm's book equity.

6.2   Testable Predictions & Hypotheses Testing Methods

Testable predictions are based on the major share issue privatisation studies that document improved performance after going public. Following MNR matched pairs methodology in Meggingson et al (1994), post-IPO and pre-IPO performance proxies are calculated and compared. Testable predictions, hypothesis test methods of Wilcoxon-Signed Rank test, Sign test and Kruskal-Wallis test are discussed in the following section.

6.2.1 Pre-IPO & Post -IPO Fundamental Performance Proxies

To test performance change predictions, fundamental performance proxies are calculated. Firstly, fundamental performance proxies for each firm for a seven-year window period are calculated – three years before IPO and three years after IPO. Then the mean of each proxy for each firm over three years pre-IPO and three years post-IPO periods are calculated, in which years -3, -2, and -1 represent pre-IPO years, year 0 represents IPO year; years 1, 2, 3 represent post-IPO years. Year 0 (IPO year) is excluded from mean calculation because this year includes both pre-IPO and post-IPO phases and the effect of IPO can not be singled out.

Therefore, firms' three years pre-IPO fundamental performance proxy mean is firms' pre-IPO performance proxy, and three years post-IPO fundamental performance proxy mean is firms' post-IPO performance proxy. For example, ROSb ('b' represents before IPO) is a firm's three years pre-IPO return on sales mean and ROSa ('a' represents after IPO) is a firm's three years post-IPO return on sales mean. ROSb and ROSa represent the firm's pre-IPO and post-IPO performance proxy respectively, and the difference between ROSa and ROSb (ROSa – ROSb) is the change in return on sales – ΔROS.

In summary, all performance proxies including return on sales (ROS), return on assets (ROA), return on equity (ROE), sales to assets turnover (SAT), real sales (SALES), quick ratio (QR), net working capital (NWCTA), total debt (LEV1) and long-term debt (LEV2) are as follows:

- *post-IPO performance proxies* are denoted as ROSa, ROAa, ROEa, SATa, SALESa, QRa, NWCTAa, LEV1a and LEV2a respectively;
- *pre-IPO performance proxies* are denoted as ROSb, ROAb, ROEb, SATb, SALESb, QRb, NWCTAb, LEV1b and LEV2b respectively.
- *changes in performance proxies or performance changes* are denoted as ΔROS, ΔROA, ΔROE, ΔSAT, ΔSALES, ΔQR, ΔNWCTA, ΔLEV1, ΔLEV2 respectively.

Subsequently, all firms' mean (median) values of post-IPO performance proxies can be compared with respective mean (median) values of pre-IPO performance proxies; and firms' performance changes after going public can be identified and the significance of these performance changes can be tested.

6.2.2 Testable Predictions

By comparing mean and median value of post- and pre-IPO performance proxies of sample firms, it is expected that profitability, operating efficiency, real output and liquidity will increase and leverage will decrease after going public. If privatisation or IPO works and brings positive impact as predicted in most privatisation studies, it is expected to see improvements in return on sales (ROSa > ROSb), return on assets (ROAa > ROAb), return on equity (ROEa > ROEb), sales to assets turnover (SATa > SATb), real sales (SALESa > SALESb), quick ratio (QRa > QRb), net working capital (NWCTAa > NWCTAb); and reduction in total debt level (LEV1a < LEV1b) and long-term debt level (LEV2a < LEV2b). The variable definitions and testable predictions are summarised in the following table 6.1.

Table 6.1 Summary of Testable Predictions of Fundamental Performance Proxies

This table presents the summary of testable predictions between the post-IPO performance proxies and pre-IPO performance proxies. In the table, each performance proxy, its definition and the testable prediction are presented accordingly. For example, $ROSa$ represents post-IPO return on sales and $ROSb$ represents pre-IPO return on sales. The predicted relationship of $ROSa > ROSb$ suggests that it is expected that firms perform better in return on sales after IPO.

	Performance Proxies	Definition	Predicted Relationship
Profitability	Return on Sales (ROS)	Net Income / Sales	$ROSa > ROSb$
	Return on Assets (ROA)	Net Income / Total Assets	$ROAa > ROAb$
	Return on Equity (ROE)	Net Income / Total Equity	$ROEa > ROEb$
Operating Efficiency	Sales Assets Turnover (SAT)	Sales / Total Assets	$SATa > SATb$
Liquidity	Quick Ratio (QR)	(Current Assets-Inventory) / Current Liabilities	$QRa > QRb$
	Net Working Capital to Total Assets (NWCTA)	(Current Assets - Current Liabilities) / Total Assets	$NWCTAa > NWCTAb$
Leverage	Total Debt Ratio (LEV1)	Total Debt / Total Assets	$LEV1a < LEVb$
	Long-term Debt Ratio (LEV2)	Long-term Debt / Long-term debt + Equity	$LEV2a < LEV2b$
Output	Real Sales(SALES)	Nominal Sales / Consumer Price Index	$SALESa > SALESb$

6.2.2.1   Wilcoxon Signed-Rank Test & Sign Test

Wilcoxon's matched pair test is then employed to test the significance of post-IPO versus pre-IPO performance changes. Specifically, it tests paired differences of changes in firms' performance proxies and endeavours to answer the question of whether changes in performance proxies in terms of ΔROS, ΔROA, ΔROE, $\Delta SALES$, ΔSAT, ΔQR, $\Delta NWCTA$, $\Delta LEV1$ and $\Delta LEV2$ are significant or not. This nonparametric test for two related samples is used when assumptions required by paired-samples t test are not met. The Wilcoxon signed-ranks method tests the null hypothesis that two related medians are the same and it is used to compare the paired performance proxies' medians from the matched sample in this thesis[54]. The median values of changes in performance proxies are computed and classified as positive, negative, or tied. If two performance proxies are similarly distributed, the numbers of positive and negative differences will not be significantly different. Therefore this test will identify any significant difference in median values between post- and pre-IPO performance proxies. In addition, the sign test is employed to test whether the percentage of firms experiencing performance change in a certain direction is greater than 50%, in other words, it tests the hypothesis that the proportion of median changes in a certain direction is significant.

6.2.2.2   Kruskal-Wallis Test

Firms' performance changes can be further examined based on grouping variables employed according to theoretical and empirical criterion. In this thesis, main sample firms are further divided into groups of listing year, sector, regulated/non-regulated industry and dominant shareholder, and then firms' performance changes are examined within each group. Because sample firms include all the firms that went public in 1997 and 1998, listing year is employed as a grouping variable. Sector and regulated/non-regulated industry are widely used as grouping variables in most of the privatisation studies, such as in Megginson et al (1994), therefore they are taken as grouping

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[54] Whether the test assumption is meet or not will be examined through data examination and choice of Wilcoxon Signed Rank Test and Kruskal Wallis Test methods are further explained in Chapter 7 (pp122).

variables. The grouping variable of dominant shareholder is purely arbitrary. In Chinese listed firms, the dominant shareholder plays a decisive role in corporate governance and corporate management, and it is expected that the dominant shareholder is an influential factor in a firm's performance changes. Therefore dominant shareholder is taken as a grouping variable. Due to data limitations, foreign share ownership cannot be employed as a grouping variable since there are only three firms with foreign ownership. The four grouping variables employed are defined as follows:

- **Listing Year** - the years when the firms went public, namely 1997 or 1998.

- **Sector** - it includes commercial, miscellaneous, industrial, utility and real estate defined by Shanghai Stock Exchange and Datastream. Commercial sector refers to firms in retailing business; miscellaneous sector includes those firms that are widely diversified and their core businesses are difficult to define; and industrial sector mainly includes manufacturing firms. No real estate firms are in the main sample because there are just a few real estate firms listed at the Shanghai Stock Exchange.

- **Regulated/Non-Regulated Industry** - D'Souza (2001) identifies regulated industries as those of electric, gas, water and telecom in comparing firms that operating in competitive versus those in non-competitive industries. In this thesis, more industry categories are included as regulated industries due to the actual regulation and practice in China. For instance, airlines, airports, automobiles, broadcasting, shipping and ports, and steel industries are also highly regulated in China and they are identified as regulated industries.

- **Dominant Shareholder** - it refers to a firm's largest shareholder after IPO, which could be state, legal person, private or employee or foreign shareholders. As mentioned earlier, because there are just three firms in the main sample with foreign shareholders, foreign shareholder is excluded from data analysis, leaving four dominant shareholders.

After grouping variables are chosen, Kruskal-Wallis analysis of ranks is then employed to determine whether changes in performance proxies within each group are significantly different or not. Although one-way analysis of variance (ANOVA) is the

method of choice when testing for differences between multiple groups, it assumes that the test variable is reasonably normal and similar in all groups. The Kruskal-Wallis test is an analysis of variance by ranks and it does not require normality of variable distribution. Based on the Kruskal-Wallis test results, a grouping variable can be potential performance determinants if firms within the group perform significantly differently, and this grouping variable can be a potential predictor in performance change regression models. For example, if firms' performance changes with sector of commercial, miscellaneous, industrial and utility are significantly differently from each other, then sector might be an important determinant in firms' performance changes after IPO.

6.3   Performance Change Analysis

The SPSS programme is used for financial data analysis.

6.3.1 Main Sample Firms

Performance changes of main samples firms are one of the focuses of this thesis. As mentioned earlier, firms' post-IPO and pre-IPO performance proxies are first calculated and then all firms' mean (median) values of post-IPO and respective mean (median) values of pre-IPO performance proxies are compared with each other, in which the differences between post-IPO and pre-IPO performance proxies are firms' performance changes. Wilcoxon Signed-rank and sign tests described above are then performed to test the significance of post-IPO versus pre-IPO performance changes as well as significance of proportion of firms experiencing those changes. Furthermore, performance changes within each grouping variable are examined to identify whether firms that went public in different years perform differently; whether firms in different sectors perform differently; whether firms with different dominant shareholders perform differently; and whether firms in regulated industries perform differently from those in non-regulated industries.

6.3.2 Minor Sample Firms

As mentioned earlier, in order to identify the existence of IPO effect, a further 100 non-IPO firms listed at the end of 1998 are examined to identify whether these non-IPO firms experience the same performance changes as those of main sample firms (or IPO firms). Following the same procedures as those of main sample firms, minor sample firms' performance changes are calculated, and then Wilcoxon-Signed Rank test and Sign test are performed. Then a comparison can be made between main sample firms and minor sample firms through Kruskal-Wallis test of group difference to confirm whether firms in two samples experience significantly different performance changes in the seven-year window period. If firms in these two samples experience significantly different performance changes during the same window period, it confirms that IPO does have effect on firms' performance, whether positive or negative. If there is no difference in performance changes between main sample and minor sample firms, it is expected that IPO does not have effect on firms' performance.

6.3.3 Post-IPO Performance Proxies Analysis

Cash flow and share price related performance proxies are available only for post-IPO years and are called supplementary performance proxies. For these supplementary performance proxies, only average three years post-IPO performance can be calculated for cash flow margin, capital expenditure to sales, capital expenditure to assets, market to book value ratio, price earning ratio and share price return, and they are summarised in the following table 6.2.

Table 6.2 Summary of Supplementary Performance Proxies

This table summarises the supplementary performance proxies. Because cash flow statements are available from 1998 and share prices are available only after IPO, the supplementary performance proxies can only be calculated for post-IPO years.

	Performance Proxies	**Definition**
Capital Investment	Capital Expenditures to Assets (CETSa)	Capital Expenditures / Total Assets
	Capital Expenditures to Sales (CETAa)	Capital Expenditures / Sales
Cash Efficiency	Cash Flow Margin (CFMa)	Net Cash Flow / Sales
MBR ratio of Equity	Market to Book Value (MBR)	Market Value of Equity /Book Value
	PE ratio (PE)	Share Price / Earning per share
	Share Price Return (Re)	$*(P_1 + D_1 - P_0)/P_0$

*Empirically, dividend payment is zero in practice, therefore share price return is in effect defined as $(P_1 - P_0)/P_0$ in data analysis.

In later regression analysis, post-IPO share price return is regressed against all post-IPO accounting performance proxies from both fundamental (defined in table 6.1, pp108) and supplementary performance proxies to explore the relationship between firms' stock market performance and accounting performance.

6.4   Regression Analysis

One of the main aims of much quantitative research in the social sciences is the demonstration of causality or relationship. Therefore in addition to comparing the mean (median) value of firms' post-IPO versus pre-IPO performance proxies, further regression models are developed through regressing a set of changes in performance proxies (dependent variables) on predictors (independent variables) based on theoretical and empirical grounds. The Ordinary Least Square method is employed and the purpose of the regression analysis is to identify the determinants or sources of the identified performance changes.

6.4.1 Variable Definition

- Dependent Variables

Dependent variables are changes in performance proxies, which are the differences between firms' post-IPO and pre-IPO performance proxies. As discussed earlier, firms' three years pre-IPO fundamental performance proxy mean is firms' pre-IPO performance proxy, and three years post-IPO mean is firms' post-IPO performance proxy, and the difference between the two is performance change after going public, which is defined as a dependent variable in regression analysis. Dependent variables include change in return on sales, change in return on equity, change in return on assets, change in sales assets turnover, change in quick ratio, change in net working capital, change in total debt, change in long-term debt, changes in real sales, which are denoted as ΔROS, ΔROE, ΔROA, ΔSAT, ΔQR, ΔNWC, $\Delta LEV1$, $\Delta LEV2$, $\Delta SALES$ respectively.

- Explanatory variables

There are few literature available providing convincing explanatory variables in single country study, therefore the new predictors chosen in this thesis are based upon theoretical and practical importance. In other words, they are theoretically and empirically identified as potential sources of performance changes.

Past research shows that ownership structure, ownership concentration and other country factors are performance determinants. Megginson et al (1994), D'Souza et al (2001) and Chen et al (2000) employ ownership structure changes as important explanatory variables for examination of post-IPO performance changes. Ownership structure changes after going public are expected to have an impact on firm performance. In this thesis, the shares held by state, legal person, private individuals and employees after IPO are employed as explanatory variables.

Xu and Wang (1997) and Tian (2000) also employ ownership concentration – Herfindahal index – as an explanatory variable in their country studies on China.

Herfindahal ownership concentration index is the sum of squared percentage of shares controlled by a firm's top ten or five shareholders. For most Chinese listed firms, shares are concentrated in the hands of five top shareholders, therefore Herfindahal index of top five shareholders is employed to measure ownership concentration.

Chen et al (2000) employ firms' listing year and sector as explanatory variables in their country study on China. Therefore if firms that went public in different years and in different sectors perform differently, these grouping variables should be employed as explanatory variables in subsequent regression analysis.

Chen et al (2000) document that one characteristic of IPO in China is that fresh capital is usually raised by selling new shares to the investing public, contrasting with privatisations in many other countries, where governments are the beneficiaries. Since most of the share issue proceeds are directly channelled into newly privatised firms instead of the government, it is assumed that the share issue size (or share proceeds) may affect firms' subsequent investment activities and financial performance.

Human capital is defined as the percentage of senior management members holding higher education degrees, including both boards of directors and senior executives. Throughout the case studies, it is found that generally managers lack managerial skills in tackling sophisticated business issues after going public. Therefore it is expected that human capital may have a positive impact on firms' performance changes.

It also emerges from the case studies that it is a common practice for senior executives to sit on boards as directors. Hence the total number of senior executives sitting on board is employed to examine the impact of cross-sitting of senior executives as board members.

The total number of board directors varies significantly ranging from five to more than twenty and case studies indicate that directors can hardly reach any consensus in

boardrooms in some firms. Therefore board size is employed as an explanatory variable to examine whether board size matters in firms' performance.

Total assets size at the year-end before IPO is used to control firm size. It is assumed that larger firms tend to have better economy of scale, but also tend to be less efficient in controlling costs.

D'Souza et al (2001) also employ restructured firms, regulated firms and real GDP growth in their cross-country study. As mentioned earlier, all firms must be restructured before IPO, hence restructuring is not a variable, but whether an industry is regulated or not can be potential explanatory variable. Most studies employ change in GDP or GNP as one of the explanatory variables since change in economy is expected to have an effect on firms' post-IPO performance if they go public in different years. Because all main sample firms went public within two years (1997 and 1998), hence they experience almost the same seven-year window period. The change in GDP (average three years post-IPO GDP versus average three years pre-IPO GDP) is constant for all samples so it is not taken as an explanatory variable.

6.4.2 Performance Change Regression Analysis

In developing performance models, cross-sectional regression is performed, in which change in each performance proxy is regressed against explanatory variables, such as state ownership, legal person ownership, private ownership, employee ownership, Herfindahal ownership concentration index, human capital, share issue size, asset size, board size, executive cross-sitting and grouping variables.

6.4.2.1   Performance Change Regression Models

$$\Delta PFM = \beta_o + \beta_1 ST + \beta_2 LP + \beta_3 PLC + \beta_4 EMP + \beta_5 CON + \beta_6 HMC + \beta_7 SSIZE$$
$$+ \beta_8 ASIZE + \beta_9 BOD + \beta_{10} CRS + \beta_{11} \text{Grouping Variables} + \varepsilon$$

Where:

- Dependent Variable:

ΔPFM = change in return on sales (ΔROS), change in return on equity (ΔROE), change in return on assets (ΔROA), change in sales assets turnover (ΔSAT), change in working capital to total assets ($\Delta NWCTA$), change in quick ratio (ΔQR), change in total debt ($\Delta LEV1$), change in long-term debt ($\Delta LEV2$) and change in real sales ($\Delta SALES$).

- Independent Variables:

There are only 36 firms out of 127 main sample firms with the presence of employee ownership; therefore employee ownership is transformed into a dummy variable to improve the explanatory power.

ST	=	average percentage of shares owned by the government for post-IPO three years;
LP	=	average percentage of shares owned by legal person shareholders for post-IPO three years;
PLC	=	average percentage of shares owned by private investors for post-IPO three years;
CON	=	Herfindahal index of ownership concentration of top five shareholders;
HMC	=	percentage of members of senior management team holding university degrees;
SSIZE	=	log of share issue size (in million Chinese Yuan);
ASIZE	=	log of total assets of the firm (in million Chinese Yuan) at the year end before going public;
BOD	=	total number of board of directors (board size);

CRS   =   total number of senior executives sitting on board as directors;

EMP   =   1, if firms with employee ownership; otherwise 0;

ε   =   regression error term.

Grouping variables will be added into regression models as potential independent variables if Kruskal-Wallis test results show that firms within each group perform significantly differently. Since 82 out of 127 main sample firms are from industrial sector, sector variable is set as dummy – industrial or non-industrial firms. Since 87 out of 127 main sample firms have state as dominant shareholders, dominant shareholder is set as dummy – state or non-state dominant shareholders. The grouping variables are as follows:

Year   =   1, if firms went public in 1997; 0, if firms went public in 1998.
Regulated =   1, if firms are in regulated industry; 0, if firms are in non-
                    regulated industry.
Industrial =   1, if firms are from industrial sector; otherwise 0.
State   =   1, if state is dominant shareholder; otherwise 0.

6.4.2.2   Regression Hypotheses

Based on the theoretical and empirical grounds, it is expected that state ownership is negative associated with performance changes after IPO, and legal person, private individuals and the presence of employee ownership are positive associated with firms' performance changes after IPO. It is also expected that higher ownership concentration will lead to performance improvement. As a result of the cash injection after IPO, it is expected that share issue size will lead to improvement in liquidity and reduction in firms' debts and subsequently improve firms' investments and performance. It is expected that human capital is associated with the performance improvement after IPO.

Meanwhile, larger board size and higher cross-sitting of executives as board directors are expected to have negative impact on performance changes.

6.4.3 Market against Accounting Performance Regression Analysis

Because both post-IPO market performance proxies and post-IPO accounting performance proxies are available, it is possible to regress firms' market performance against their accounting performance to identify the relationship between the two. The question of whether firms' stock market performance reflects firms' accounting performance, and which of those accounting performance proxies are more important than others can be answered.

There are three market performance indicators discussed earlier – market to book value ratio (MBR), price-earning ratio (P/E) and share price return (Re). Because both MBR and P/E connect accounting and market information (market value and book value of equity), which may lead to auto-correlation in regressing either MBR or P/E against accounting performance proxies. Therefore it is assumed that only share price return is the pure market performance measure.

6.4.3.1   Market against Accounting Performance Regression Model

Share price return (Re) is always the true indicator of firms' stock market performance, no matter whether the financial market is weak or semi-strong efficient. In the market against accounting performance model, Re is employed as a dependent variable, and it is the average three years post-IPO share price return. The explanatory variables are post-IPO accounting performance proxies.

$$\begin{aligned} Re = \ & \beta_0 + \beta_1 \text{ ROSa} + \beta_2 \text{ ROAa} + \beta_3 \text{ ROEa} + \beta_4 \text{ SATa} + \beta_5 \text{ SALESa} + \beta_6 \text{ QRa} \\ & + \beta_7 \text{ NWCTAa} + \beta_8 \text{ LEV1a} + \beta_9 \text{ LEV2a} + \beta_{10} \text{ CETAa} + \beta_{11} \text{ CETSa} + \beta_{12} \text{ CFMa} \\ & + \beta_{13} \text{Grouping Variables} + \varepsilon \end{aligned}$$

Where:

- Dependent Variables:

Re = average three years post-IPO share price return;

- Independent Variables:

  <u>fundamental accounting performance proxies</u>

ROSa	=	average three years post-IPO return on sales;
ROAa	=	average three years post-IPO return on assets;
ROEa	=	average three years post-IPO return on equity;
SATa	=	average three years post-IPO sales to total assets;
SALESa	=	average three years post-IPO sales;
QRa	=	average three years post-IPO quick ratio;
NWCTAa	=	average three years post-IPO net working capital to total assets;
LEV1a	=	average three years post-IPO total debt ratio;
LEV2a	=	average three years post-IPO long-term debt ratio;

  <u>supplementary accounting performance proxies</u>

CETAa	=	average three years post-IPO capital expenditure to assets;
CETSa	=	average three years post-IPO capital expenditure to sales;
CFMa	=	average three years post-IPO cash flow margin.
<u>and</u>		
ε	=	regression error term

Grouping variables may be added into the regression model as potential explanatory variables if they are determinants of the share return after initial Kruskal-Wallis test of group difference of average three years post-IPO share price return. They are the same as those in performance change regression models:

Year	=	1, if firms went public in 1997; 0, if firms went public in 1998.
Regulated	=	1, if firms are in regulated industry; 0, if firms are in non-regulated industry.
Industry	=	1, if firms are from industrial sector; otherwise 0.
State	=	1, if state is dominant shareholder; otherwise 0.

6.4.3.2 Regression Hypotheses

As suggested by Ross et al (1998), share price is a function of the future dividend payments. Since listed firms seldom pay dividends, it is not possible to value share price based on expected dividend payments. It is hypothesised that the share price return is associated with real output instead of profitability measures, and this is will be further discussed in data analysis later on.

6.5 Summary

This chapter presents the testable predictions and hypotheses testing methods employed in performance change analysis; regression method employed and hypotheses in performance change regression analysis.

From the next chapter onwards, the analysis of financial data and case study is presented accordingly. Chapter 7 and 8 present the performance change analysis, chapter 9 and 10 presents regression analysis and post-IPO performance analysis, chapter 11 and 12 presents case study analysis, and chapter 13 summarises findings of the thesis.

Chapter 7   Performance Change Analysis: Exploring Data

Before conducting the analysis, improvements can often be made to data at hand without resorting to the expense of collecting new data. Marsh (1990) argues that the purpose of transforming data is to make them more amenable to analysis, to promote comparability and to focus attention on differences. In addition to data transformation, the characteristics of the data set will then be examined to justify econometric methods for further data analysis.

7.1   Data Transformation

As mentioned in Chapter 6, performance proxies data are collected for sample firms (both main sample and minor sample) over a seven years period – three years before going public, the year of going public and three years after going public. Performance proxies include return on sales, return on assets, return on equity, sales to assets turnover, real sales, quick ratio, net working capital to total assets, total debt and long-term debt[55]:

- *post-IPO performance proxies* are denoted as ROSa, ROAa, ROEa, SATa, SALESa, QRa, NWCTAa, LEV1a and LEV2a respectively;

- *pre-IPO performance proxies* are denoted as ROSb, ROAb, ROEb, SATb, SALESb, QRb, NWCTAb, LEV1b and LEV2b respectively.

- *changes in performance proxies or performance changes* are denoted as ΔROS, ΔROA, ΔROE, ΔSAT, ΔSALES, ΔQR, ΔNWCTA, ΔLEV1, ΔLEV2 respectively.

7.1.1 Performance Proxies - Sales

Within the above mentioned performance proxies, only sales performance in terms of SALESa, SALESb and ΔSALES are in actual values (Chinese Yuan) and need to be transformed to make sales of each year comparable with each other. The rationale behind this transformation is that each year's real sales figure is affected by the inflation rate of that particular year. Inflation is the change in average prices in an economy over a given period of time or a general sustained rise in price level. The price level is measured in the form of an index. So if the price index were 100 today

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[55] See table 6.1 (pp108) Summary of Testable Predictions for definition.

and 110 in one year's time, then the rate of inflation would be 10%. Deflating real sales is to promote comparability between sales where the absolute scale values are different due to inflation. Appendix 7.1 (pp297) summarises the annual consumer price indices provided by Datastream as well as the rebased indices on 1997 and 1998 in order to achieve simplicity in later data transformation. Therefore, real sales of a year can be deflated by the consumer price index of respective year and then standardised on the base of year 0, which is the firm's listing year and not taken into account in performance change analysis. Through deflation and standardisation, the scale of measurement of real sales has reduced and the comparability has improved.

7.1.2 Explanatory Variables – Share Issue Size & Assets Size

The measurement unit of share issue size and total assets size is in millions (Chinese Yuan), and the improvement that can be made is to change the scale of measurement on which the data has been recorded. Taking logs is a re-expression of the scale of measurement, which has the same effect as adding or subtracting a constant to the numbers. The result is to scale the entire variable by a factor, evenly shrinking the measurement of the variable. Therefore, share issue size and assets size data are transformed by using logs to reduce the scale of measurement.

7.1.3 Other Transformations

Theoretical transformation is based on the nature of the data and empirical transformation is made in response to an examination of the data itself. Data transformation also provides a means of modifying variables to correct violations of the statistical assumptions underlying the multivariate techniques or to improve the relationship (correlation) between variables to achieve normality and homoscedasticity or linearity. The relevant transformations will be further discussed during data analysis when it is appropriate.

7.2   Data Examination

The main purpose of examining data is to get a thorough understanding of the basic characteristics of the underlying data and relationships. The following section presents the overview of the performance pattern over seven years, and the initial examination of post- versus pre-IPO performance changes based on four grouping variables.

7.2.1 Overview of Performance Proxies

Appendix 7.2 (pp298-299) summarises the statistics of all fundamental performance proxies over the seven-year period under investigation, in which year 0 is the year of going public (or event year). The mean and median values of year 0 are mainly used here to indicate the impact of IPO year on performance and are not included in data analysis. Appendix 7.2 shows that IPO has a strong impact on firms' performance and generally performance proxies change dramatically after IPO. One concern is that all main sample firms went public in 1997 and 1998, and coincidentally East Asia's financial crisis of 1997-1998 may have had an impact on firms' post-IPO performance. But in fact China did not itself suffer financial crisis of 1997 and 1998. China escaped because its currency is only partially convertible which meant that its technically insolvent banking system was not exposed[56]. Therefore the concern about the impact of the financial crisis of 1997 and 1998 is eliminated.

The following graphs of mean and median values of all performance proxies are based on data in appendix 7.2, and they further demonstrate the trends in the mean and median values of each change in performance proxy over the three years post-IPO and three years pre-IPO period. In the following graphs, -3, -2 -1 represent three years before IPO, two years before IPO and one year before IPO respectively; similarly, 1, 2 and 3 represent one year, two years and three years after IPO respectively. Year 0 represents the year of IPO (even year).

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[56] In East Asia, only two economies (China's and Hong Kong's) were not directly hit by the financial crisis of 1997 and 1998. Hong Kong escaped because of its world class banking system and abundant foreign-exchange reserves (A Survey of Asian Finance, The Economist, 8th FEB 2003).

Real Sales (Sales)
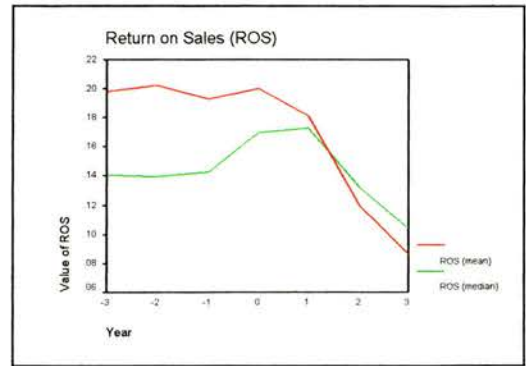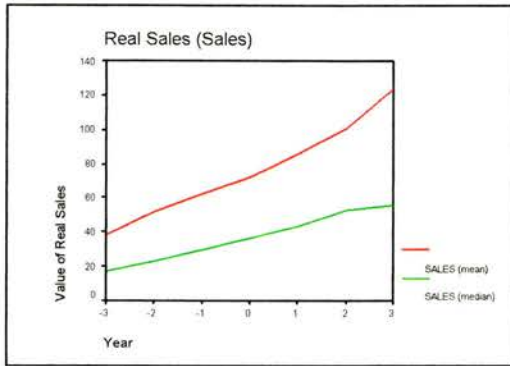
Return on Sales (ROS)

The above Real Sales figure shows that firms' sales increase constantly and smoothly during the pre- and post-IPO years and IPO does not bring a sudden impact on real sales. The ROS figure shows that the mean and median values of return on sales are stable during pre-IPO years and increase slightly due to IPO effect, and then drop dramatically during three post-IPO years. Therefore firms might experience severe problems in controlling costs, given increasing sales after IPO. The cost of sales goes up might be due to increased competition, or firms might put focus on market share maximization instead of profit maximization etc. during post-IPO years. The average ROS of the three post-IPO years is much lower than that of pre-IPO years.

Return On Assets (ROA)

Return On Equity (ROE)
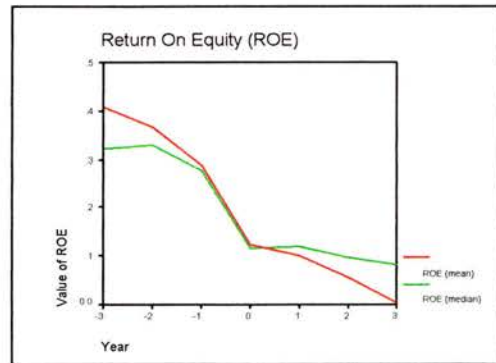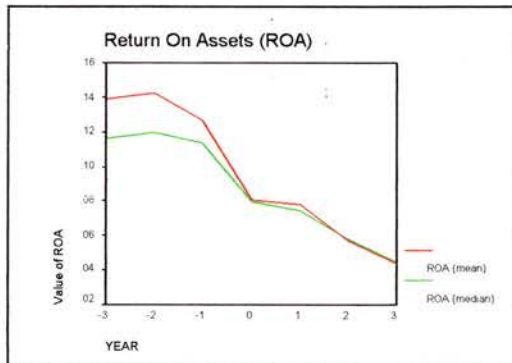
The above ROA and ROE graphs show that IPO has a strong impact on mean and median values of return on assets and return on equity and both of them drop sharply after IPO. Furthermore, ROA and ROE continue to decline dramatically during three post-IPO years, which may indicate that as firms' assets size, equity size and real sales increase, the returns on both assets and equity continue to deteriorate because

of possible high investment costs or expenditures. The average values of ROA and ROE during three post-IPO years are much lower than those of pre-IPO years are.

Sales Assets Turnover (SAT)
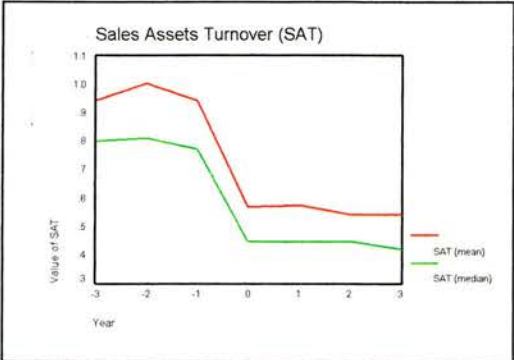
The above SAT graph shows that IPO has a significant impact on sales to assets turnover and both mean and median value of SAT experience sharp decline due to the effect of IPO, and then keep stable during three post-IPO years. It might indicate that firms failed to improve sales assets efficiency as both the sales and the total assets increase. The average SAT of the three post-IPO years is much lower than that of pre-IPO years is.

Quick Ratio (QR)   Net Working Capital to Total Assets (NWCTA)
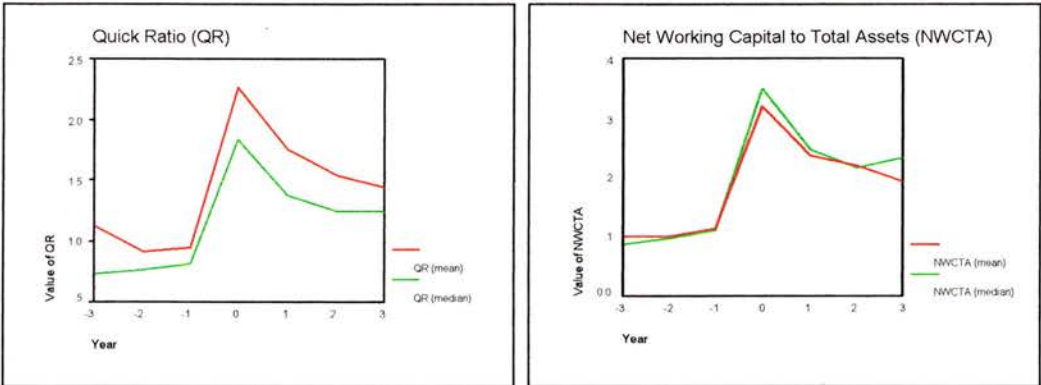
The above two graphs show that both liquidity ratios – QR and NWCTA of pre-IPO years – are quite low and both liquidity ratios improve dramatically after going public, but firms could not hold improvement in QR and NWCTA and their performance deteriorates during the three post-IPO years. Share issue proceeds injected into the firms might help to improve the firms' liquidity, but less efficient operating practice, such as large inventory or current liabilities etc., might contribute

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to the decline in liquidity during post-IPO years. But on average both post-IPO liquidity ratios are much higher than those of their pre-IPO years are.

Total Leverage (LEV1)

Value of LEV1

LEV1 (mean)
LEV1 (median)

Year

Long-term Leverage (LEV2)

Value of LEV2

LEV2 (mean)
LEV2 (median)
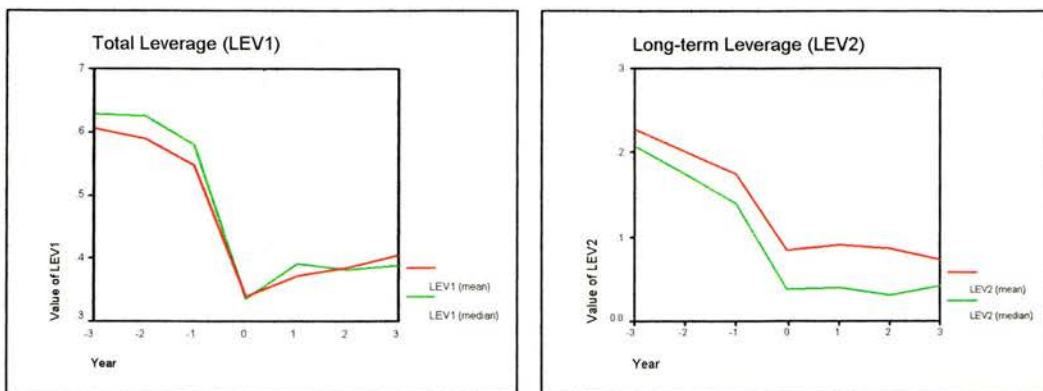
Year

The above graphs show that total leverage (LEV1) and long-term leverage (LEV2) drop dramatically due to the effect of IPO, and both ratios are stable during three post-IPO years. This might indicate that share issue proceeds may help firms to payback their debts, and firms tend to reduce borrowing, especially long-term debt during post-IPO years. The average values of LEV1 and LEV2 of the three post-IPO years are much lower than their equivalents during the pre-IPO years are.

Therefore, as indicated in appendix 7.2 and the above graphs, IPO does have a strong impact on all performance proxies. Firms' post-IPO return on assets, return on equity, return on sales, sales assets turnover, total leverage and long-leverage drop dramatically compared to their pre-IPO performance. On the other hand, firms' post-IPO real sales, quick ratio and net working capital to total assets increase dramatically from their pre-IPO values. It is expected that post-IPO versus pre-IPO changes in each performance proxy could be significant. Since difference of performance proxies between average post-IPO years and average pre-IPO years are the focus of this thesis, the following section further examines changes of post-versus pre-IPO performance proxies.

7.2.2 Examination of Changes in Performance Proxies

Appendix 7.3 (pp300-301) summarises the statistics of changes of post-IPO versus pre-IPO in fundamental performance proxies. As shown in appendix 7.3, mean and

median values of changes in return on sales, return on assets, return on equity and sales to assets turnover are negative, which indicates performance deteriorations in profitability and sales efficiency. Mean and median values of changes in quick ratio, networking capital and sales are all positive, which indicates performance improvement in short-term liquidity and real output. Mean and median values of changes in total leverage and long-term leverage are all negative, which indicates reduced total and long-term borrowing after going public. Kolmogorov-Smirnov test is employed to examine the nature of changes in performance proxies.

7.2.3   Kolmogorov-Smirnov test of Changes in Performance Proxies

Firstly, the Kolmogorov-Smirnov test is employed to test whether changes in performance proxies are normally distributed and then subsequent appropriate significance (of performance changes) test methods can be chosen. Typical statistical tests of difference between matched samples incorporate assumptions about the underlying distribution of data such as normality and they are called parametric methods. If the paired difference (difference of post-IPO versus pre-IPO performance proxy), namely change in performance proxy[57] is symmetric or normally distributed, the parametric method of Paired-Samples T Test should be employed; if the paired difference is not symmetric or normally distributed, the non-parametric method of Wilcoxon-Signed Rank Test then can be employed.

The Tests of Normality table 7.1 below shows Kolmogorov-Smirnov normality test results with statistics, degree of freedom and significance values. A significance value (Sig.) in the test table less than 0.05 indicates a deviation of the distribution of paired difference from normality, therefore normal distribution would expect a significance value which is higher than 0.05. The normality test results show that only ΔNWCTA and ΔLEV1 have significance values of 0.20 in the Kolmogorov-Smirnov test, which suggests that these two performance proxies are normally distributed, leaving most of the paired differences deviate significantly from normality.

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[57] Changes in performance proxies are denoted as ΔROS, ΔROA, ΔROE, ΔSAT, ΔSALES, ΔQR, ΔNWCTA, ΔLEV1, ΔLEV2 respectively.

Table 7.1 Kolmogorov-Smirnov Test of Normality

	Kolmogorov-Smirnov		
	Statistic	df	Sig.
ΔROS	.322	127	.000
ΔROA	.220	127	.000
ΔROE	.264	127	.000
ΔSAT	.146	127	.000
ΔSALES	.146	127	.000
ΔQR	.164	127	.000
ΔNWCTA	.048	127	.200*
ΔLEV1	.053	127	.200*
ΔLEV2	.103	127	.002

*A significance value higher than 0.05 indicates a normal distribution

As mentioned earlier, data transformation could provide a means of modifying variables to correct violations of the statistical assumptions such as normality. But the nature of the data set – paired differences are mostly in terms of either negative or positive ratios – does not suggest that data transformation is an appropriate way to achieve normality.

Since the assumption of parametric test cannot be met, the non-parametric test method has to be considered. Non-parametric test methods are sometimes known as assumption-free tests, making no assumptions about the type of data on which they can be used. The data therefore do not have to meet the assumptions required by the paired-samples *t* test. Non-parametric tests work on the principle of ranking the data, and the analysis is then carried out on the ranks rather than the actual data. Their chief advantage is improved reliability when the distribution is unknown or not symmetric. Therefore, non-parametric methods of Wilcoxon's Signed Rank test, together with Sign test are employed to test matched sample differences and the significance of proportion changes. In addition, the non-parametric method of Kruskal-Wallis analysis of ranks is employed to test the significance of group differences. In fact, most privatisation studies (employing MNR methodology) use non-parametric method of Wilcoxon's Signed Rank test and Sign test in examining

significance of performance changes, such as Megginson et al (1994), Chen et al (2000), D'Souza et al (2001) etc. The possible explanation is that these studies encounter the similar issue of a non-parametric data set.

7.2.4 Performance Change Overview By Group

As mentioned in Chapter 6, four grouping variables – IPO year, regulated industry, sector and dominant shareholder – are employed to examine changes in performance proxies for firms within each subgroup. The following table 7.2 lists main sample firms' distribution within subgroup of each grouping variable.

Table 7.2   **Firm Distribution within Group of IPO Year, Regulated/ Non-Regulated Industry, Sector & Dominant Shareholder**

Grouping Variable	Subgroup			
IPO Year	1997	1998		
	79	48		
Regulated/ Non-Regulated	Regulated	Non-Regulated		
	29	98		
Sector	Commercial	Industrial	Miscellaneous	Utility
	2	82	33	10
Dominant Shareholder	State	Legal Person	Employee	Private
	87	32	4	4

Changes in performance proxies for main sample firms within each grouping variable are examined through bar charts. If firms' changes in performance proxies significantly differ within each subgroup, this particular grouping variable might be an explanatory variable in determining firms' changes in performance proxies or performance changes. The following figure 7.1 demonstrates the overview of performance changes by four grouping variables.

Figure 7. 1   Overview of Performance Changes by Group
(main sample firms)

The following charts are overview of performance change (median value) of respective grouping variable. Performance changes are denoted as CROS, CROA, CROE, CSAT, CQR, CNWCTA, CLEV1, CLEV2 and CSALES, and they represents change in return on sales, change in return on assets, change in return on equity, change in sales assets turnover, change in quick ratio, change in net working capital to total assets, change in total debt ratio, change in long-term debt ratio and change in real sales. Grouping variables are IPO years, sector, regulated or non-regulated industry and dominant shareholder. N represents the number of the firms within each grouping variable.

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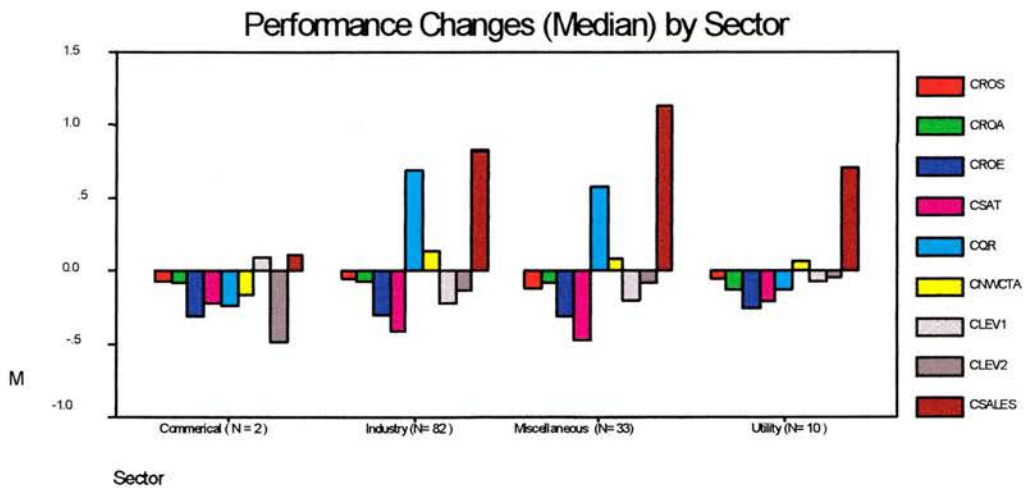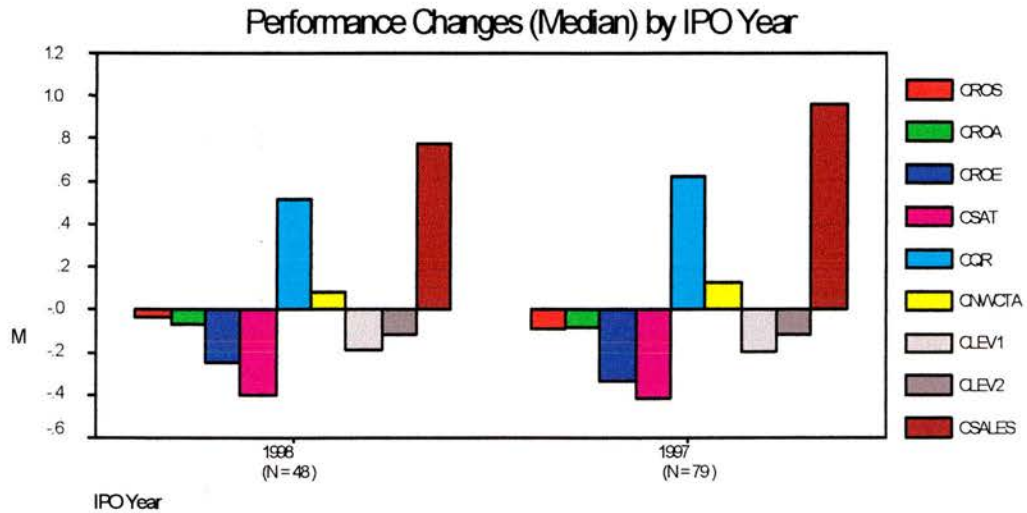
Figure 7.1   **Cont'd**

Performance Changes (Median) by Regulated / Non-regulated Industry

Performance changes (Median) by Dominant Shareholder
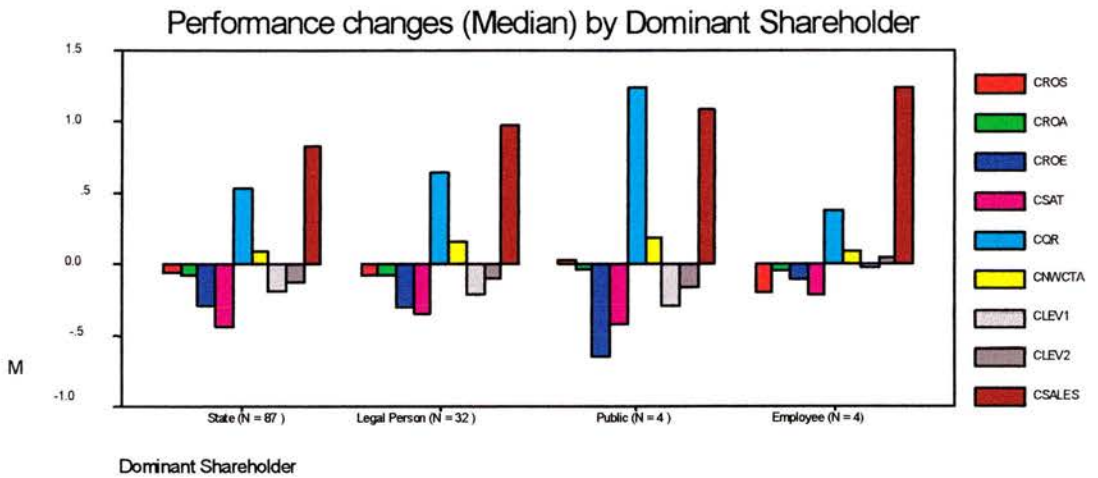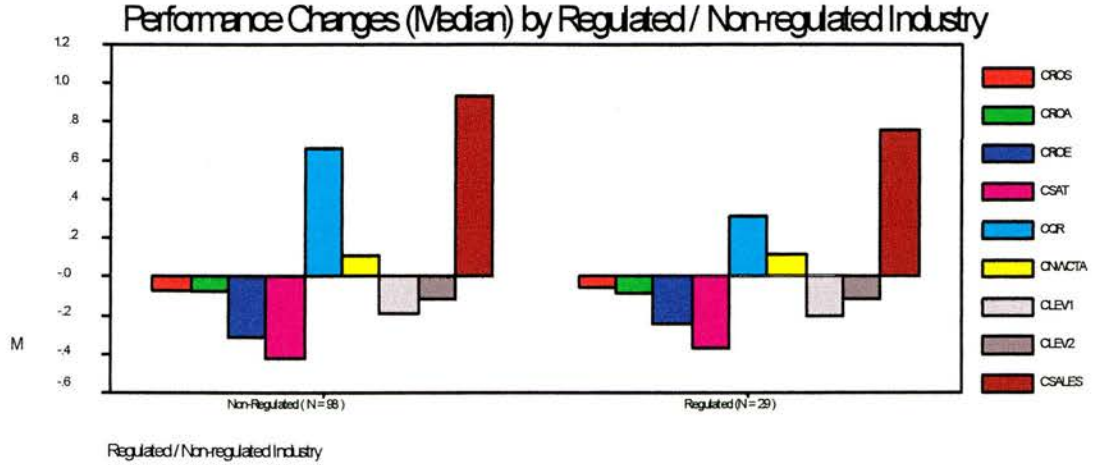
- Performance Change by Year of IPO

When firms' performance changes are compared by the year of IPO, the median values of performance changes in different IPO years show identical patterns. Regardless of firms went public in 1997 or 1998, profitability and operating efficiency performance are negative, which means that return on sales, return on assets, return on equity and sales to total assets deteriorate after going public. Liquidity, leverage and real output improve as predicted, in which quick ratio, net working capital and sales improve dramatically after going public, and there is a moderate improvement in net working capital to total assets. Total leverage and long-term debt level decline as expected. The only difference for firms in this group is that performance changes in quick ratio, net working capital and real sales are slightly higher for firms that went public in 1997 than for firms that went public in 1998.

- Performance Change by Sector

When firms' performance changes are compared by sector, the median values of performance changes in each respective sector – industrial, miscellaneous, utility and commercial – show a similar pattern, except that the commercial sector stands out from the rest. In the first three sectors, profitability and operating efficiency changes are negative, which shows that return on sales, return on assets, return on equity and sales to total assets deteriorate after going public. But liquidity, leverage and real output improve as predicted, with a sharp improvement in quick ratio and sales as well as a moderate improvement in quick ratio. Total leverage and long-term debt ratios decline as excepted. The commercial sector shows the same negative changes in profitability and operating efficiency as those of the other three sectors, and a very small increase in sales. Different from others, this sector shows a sharp decrease in long-term debt ratio and quick ratio as well as some increase in total-debt ratio. The main reason could be that there are only two firms in the commercial sector, which may not be representative of that peer group.

- Performance Change by Regulated or Non-regulated Industry

When firms' performance changes are compared between regulated and non-regulated industries, the pattern again shows that performance changes in regulated or non-regulated industries are almost identical. Profitability and operating efficiency deteriorate after IPO, with negative changes in return on sales, return on assets, return on equity and sales to total assets. Liquidity and sales changes are positive, quick ratio and real sales improve dramatically and there is a moderate improvement in net working capital to total assets. Both long-term and total debt ratios decrease as predicted.

- Performance Change by Dominant Shareholder

When firms' performance changes are compared by dominant shareholder, the similar pattern exhibits again, except employee shareholder shows the fewest changes in all performance benchmarks. With dominant shareholder of state, legal person and private investors, profitability and operating efficiency decline at the same level, with deteriorated return on sales, return on assets, return on equity and sales to total assets after IPO. Liquidity and real sales improve as predicted, with significant improvement in quick ratio and real sales, as well a moderate improvement in net working capital to total assets. Total debt and long-term debt ratio decrease as expected. Regarding employee as dominant shareholder, the basic change pattern is the same as those of other three dominant shareholders, but the extent of change is much smaller. One exception is that long-term leverage increase for employee dominant shareholder, but not for other dominant shareholders. The main reason could be that there are only four firms with employee dominant shareholder, which may not be representative of that peer group.

7.3   Summary

In data transformation, both share issue size and firm assets size need to be transformed. In data examination, the overviews of performance proxies over seven-year window period and post- versus pre-IPO changes in performance proxies by grouping variables are presented. The performance patterns show that firms experience deteriorated performance after IPO, with only improvement in real sales,

liquidity and leverage. In addition, performance changes based on grouping variables of IPO year, sector, regulated industry and dominant shareholder all show similar deteriorated patterns and it seems that firms do not perform differently within each group. Data examination also suggests that the non-parametric methods of Wilcoxon's Signed Rank test and Sign test should be employed to test matched sample differences and the significance of proportion changes.

The detailed performance change analysis is further presented in the next chapter.

Chapter 8   Performance Change Analysis:
Main Sample Firms & Minor Sample Firms

This chapter presents a detailed performance change analysis of main sample firms and minor sample firms, and then the results of each are compared to identify whether the IPO effect exists.

8.1   Performance Change Analysis (Main Sample Firms)

Firms in the main sample are drawn from firms went public in 1997 and 1998 at the Shanghai Stock Exchange. In the main sample, for 79 firms that went public in 1997, their average three years post-IPO performance from 1998 to 2000 are compared with their average three years pre-IPO performance from 1994 to 1996. For 48 firms went public in 1998, their average three years post-IPO performance from 1999 to 2001 are compared with their average three years pre-IPO performance from 1995 to 1997. The values of performance on both IPO years (year 0) are excluded from the data analysis.

In the analysis of performance change, firstly, the mean and median value of the average three years post-IPO performance proxies and average three years pre-IPO performance proxies are calculated separately. Then the post-IPO versus pre-IPO performance changes – the mean and median values of paired difference – are calculated. The firms within each grouping variable (i.e. IPO year) are then examined by calculating the mean and median value of each paired difference within each sub-group (i.e. 1997 and 1998). The significance of paired difference is examined by non-parametric method of Wilcoxon-Signed Rank test, the significance of proportion of firms experiencing performance changes is examined by Sign test; and the significance of the group difference is examined by Kruskal-Wallis test.

8.1.1 Post-IPO versus Pre-IPO Performance Change Results

The results of post- versus pre-IPO performance changes are summarised table 8.1.

Table 8.1 Summary Results of Performance Change of Main Sample Firms

This table presents empirical results of performance changes for firms that went public in 1997 and 1998. For each performance proxy, the number of observations, the mean and median values during three years before and three years after going public, mean and median change in the proxy's value after versus before going public. Wilcoxon Signed rank test is employed to test for significance of change in median values. Real sales are deflated by consumer price index and normalised on the base year of 1997 and 1998 respectively.

Variables	N	Mean Before (Median)	Mean After (Median)	Mean Change (Median)	Wilcoxon Z-Statistic for Difference in Median (After-Before)	Percentage of Firms With Performance Change	Sign test Z statistics (Significance of Percentage)
Profitability							
ROS (%)	127	.1977 (.1465)	.1287 (.1403)	-.069 (-.0193)	-3.564a	66.14% ↓	-3.549a
ROA (%)	127	.1363 (.1164)	.059 (.0597)	-.0772 (-.0664)	-9.391a	92.13% ↓	-9.406a
ROE (%)	127	.3534 (.3208)	.0536 (.102)	-.2998 (-.2231)	-9.721a	95.28% ↓	-10.116a
Operating Efficiency							
SAT (%)	127	.9603 (.8081)	.5522 (.4516)	-.4081 (-.3572)	-9.218a	89.76% ↓	-8.874a
Liquidity							
Quick Ratio (%)	127	.9949 (.8113)	1.57759 (1.3589)	.5827 (.483)	7.346a	81.89% ↑	7.099a
NWCTA (%)	127	.105 (.1088)	.217 (.2355)	.112 (.1053)	6.586a	76.38% ↑	5.857a
Leverage							
LEV1 (%)	127	.5805 (.6115)	.3862 (.3764)	-.1944 (-.1952)	-8.886a	91.34% ↑	-9.229a
LEV2 (%)	127	.201 (-.1624)	.0831 (.0445)	-.1179 (-.0946)	-6.848a	72.44% ↑	-5.188a
Output							
Real Sales	127	.7149 (.7156)	1.604 (1.3734)	.8891 (.7033)	9.3a	94.49% ↑	9.938a

a. Indicates significance at the one percent level.
b. Indicates significance at the five percent level.
c. Indicates significance at the ten percent level.
↓ Declined performance, not as expected.
↑ Improved performance, as expected.

As shown in table 8.1, return on sales, return on assets and return on equity all fall significantly after IPO. The mean (median) value of return on sales decreases from 19.77% (14.65%) to 12.87% (14.03%); mean (median) value of return on assets declines from 13.63% (11.64%) to 5.9% (5.97%) and mean (median) value of return on equity drops from 35.34% (32.08%) to 5.36% (10.2%). Return on equity exhibits a sharp decline compared with both return on assets and return on sales. With given net profits, return on sales depends on firms' operating costs, return on assets depends on firms' total assets, and return on equity depends on firms' book equity. To some extent, firms can control their operating costs and total assets after going public, but not book equity – which is a fixed amount. If firms cannot generate enough profits after IPO, return on equity would deteriorate due to the double effects of dramatically increased book equity and poor net profits.

Output is measured by each year's real sales. It is deflated by inflation rate of each respective year and then standardised based on output in year 0 (IPO year), so that each year's sales figure is expressed as a unit of output in year 0. As expected, following going public, mean (median) value of real sales increases from 0.71 (0.7156) to 1.60 (1.37).

Operating efficiency is measured by sales to total assets, which reflects the amount of sales generated by assets. The results suggest that the mean (median) value drops from 96.03% (80.81%) to 55.22% (45.16%) with 89.76% of firms experiencing a negative change and the median change is significant at 1% level. If firms' output (or real sales) improves, the sharp decline in sales assets turnover could be the result of a large expansion in total assets size. Therefore the possible explanation is that firms may embark on over-investment after IPO. Due to lack of employment data for sample firms, sales efficiency (sales/employee) is not measured in this thesis.

Liquidity is examined to find out whether share issue proceeds could improve firms' liquidity position. Liquidity is measured by quick ratio and net working capital to total assets. Both liquidity ratios rise as expected following going public. Mean

(median) value of quick ratio increases from 99.49% (81.13%) to 157.76% (135.89%), mean (median) value of net working capital to total assets increases from 10.5% (10.88%) to 21.7% (23.55%). The dramatic improvement in liquidity suggests that as the share issue proceeds are injected into the firms after IPO, firms may use the cash to pay back short-term bank loan and debts so as to improve their short-term liquidity position.

The leverage is measured by total debt and long-term debt ratios. Both debt ratios fall as expected. Mean (median) value of total debt ratio decreases from 58.05% (61.15%) to 38.62% (37.64%), and mean (median) value of long-term debt ratio decreases from 20.1% (16.4%) to 8.3% (4.45%). Therefore in addition to improving short-term liquidity, firms may use share issue proceeds to reduce long-term debts.

The above results show that for firms listed at the Shanghai Stock Exchange, the return on sales, return on assets, return on equity and sales to total assets deteriorate after IPO, while quick ratio, net working capital, total debt ratio, long-term debt ratio and real sales improve as predicted.

As performance changes are identified, the question that arises is whether changes in performance proxies are significant or not. In the next section, the significance of the above examined post- versus pre-IPO performance changes are further tested by Wilcoxon Signed-Rank test & Sign test.

8.1.2 Wilcoxon-Signed Rank Test & Sign Test Results

The Wilcoxon's matched pair test is employed to test differences between the post-IPO and post-IPO performance. The Wilcoxon signed-ranks method tests the null hypothesis that two related medians are the same. In this thesis, Wilcoxon signed-ranks method is employed to compare the median values of post-IPO versus pre-IPO of performance proxies from the matched sample. In addition, the sign test is employed to determine whether the proportion of firms experiencing changes in a specified direction is greater than 50%. The differences between two performance proxies for all firms are computed and classified as either positive, negative, or tied.

If these two performance proxies are similarly distributed, the numbers of positive and negative differences will not be significantly different.

As shown in table 8.1, Wilcoxon-Signed Rank test results show that decrease in return on sales, return on assets, return on equity and sales to total assets are all significant at 1% level; increase in quick ratio, net working capital, real sales and improvement in total and long-term debt reduction are also significant at 1% respectively. The sign tests suggest that only 33.86% of firms generate better return on sales, 7.87% of firms show improved return on assets, 4.72% of firms produce higher return on equity and 10.24% of firms improve their operating efficiency after IPO. The majority firms experience deterioration in return on sales, return on assets, return on equity and sales assets turnover. The proportion of firms with declined performance is significant at 1% level in return on sales, return on equity, return on assets and sales assets turnover respectively. Meanwhile, the sign tests also find that 81.89% and 76.38% of firms exhibit improved quick ratio and net working capital to total assets respectively; 91.34% and 72.44% of firms reduce their total debt and long-term debt level respectively, and 94.49% of firms generate higher sales after IPO. The sign tests indicate that the proportion of firms with improved performance is significant at 1% level in quick ratio, net working capital, total and long-term debt and real sales respectively.

Now the overall performance of main sample firms is drawn. In the next section, firms' performance changes within each grouping variable of IPO year, sector, regulated industry and dominant shareholder are examined in detail.

8.1.3 Kruskal-Wallis test of Subgroup Performance Change Results

The post-IPO versus pre-IPO performance changes are further examined based on grouping variables – IPO year, regulated or non-regulated industry, dominant shareholder and sector. Based on each grouping variable, firms are further partitioned into their subgroup, and then each subgroup's performance changes are tested by Wilcoxon Signed Rank test and subgroup differences are further tested by Kruskal-Wallis test. In this thesis, Kruskal-Wallis analysis of ranks is employed to test the

differences in each subgroup of all sample firms due to the non-parametric nature of the data set.

8.1.3.1 Comparison of Performance Changes by IPO Year

Table 8.2 presents the comparison of performance changes after IPO for firms with different IPO years.

Table 8.2 Comparison of Performance Change after IPO for Firms Went Public in 1997 versus in 1998

This table compares empirical results of performance change for firms that went public in 1997 versus in 1998. For each performance proxy, it shows the number of observations, the mean and median values during three years before and three years after going public, mean and median change in the proxy's value after versus before going public. Wilcoxon rank sum test is employed to test for significance of change in median values. Kruskal-Wallis test is employed to test the group difference with mean ranks for each subgroup.

Variables	N	Mean Before (Median)	Mean After (Median)	Mean Change (Median)	Wilcoxon Z-Statistic for Difference in Median (After-Before)	Kruskal-Wallis Results Mean Rank for Subgroup		
						1998	1997	KW test 'p' value
Profitability								
ROS (%)								
1998	48	.1798 (.1451)	.1450 (.1282)	-.0348 (-.0227)	-3.364 a	59.83		
1997	79	.2086 (.1487)	.1188 (.1420)	-.0898 (-.0098)	-2.077 b		66.53	0.320
ROA (%)								
1998	48	.1288 (.1130)	.0574 (.0517)	-.0714 (-.0684)	-5.898 a	63.42		
1997	79	.1408 (.1179)	.0601 (.0612)	-.0808 (-.0641)	-7.311 a		64.35	0.889
ROE (%)								
1998	48	.3259 (.3114)	.0795 (.0969)	-.2465 (-.2012)	-6.021 a	67.17		
1997	79	.3702 (.3309)	.0379 (.1042)	-.3323 (-.2392)	-7.638 a		62.08	0.450
Operating Efficiency SAT (%)								
1998	48	.9158 (.7939)	.5151 (.4540)	-.4007 (-.3500)	-5.713 a	63.94		
1997	79	.9873 (.8139)	.5747 (.4500)	-.4126 (-.3778)	-7.204 a		64.04	0.988
Liquidity Quick Ratio (%)								
1998	48	1.0436 (.8365)	1.5611 (1.3243)	.5175 (.3882)	4.041 a	60.08		
1997	79	.9653 (.7915)	1.5876 (1.3749)	.6223 (.5177)	6.817 a		66.38	0.350

Table 8.2   Cont'd

Variables	N	Mean Before (Median)	Mean After (Median)	Mean Change (Median)	Wilcoxon Z-Statistic for Difference in Median (After-Before)	Kruskal-Wallis Results Mean Rank for Subgroup 1998	1997	KW test 'p' value
NWCTA (%)								
1998	48	.1264 (-.1214)	.2074 (.2064)	.0811 (.0498)	2.954 a	55.08	69.42	0.033 b
1997	79	.0920 (-.0911)	.2227 (.2448)	.1307 (.1414)	5.811 a			
Leverage LEV1 (%)								
1998	48	.5833 (-.6180)	.3915 (.3736)	-.1918 (-.2072)	-5.549 a	64.85	63.48	0.838
1997	79	.5789 (.5981)	.3829 (.3781)	-.1960 (-.1848)	-6.915 a			
LEV2 (%)								
1998	48	.2063 (-.1744)	.0882 (.0533)	-.1180 (-.1056)	-4.287 a	60.56	66.09	0.412
1997	79	.1978 (.1477)	.0800 (.0413)	-.1178 (-.0751)	-5.227 a			
Output Real Sales								
1998	48	.7572 (.7639)	1.5314 (1.4052)	.7742 (.6284)	5.826 a	59.40	66.80	0.272
1997	79	.6892 (.6843)	1.6482 (1.3649)	.9589 (.7584)	7.267 a			

a. Indicates significance at the one percent level.
b. Indicates significance at the five percent level.
c. Indicates significance at the ten percent level.

As shown in table 8.2, all performance changes are significant for firms that went public in either 1997 or 1998. However it is noted that the mean (median) change of return on sales for firms that went public in 1998 is –3.48% (-2.27%) as compared to –8.98% (-0.98%) for firms that went public in 1997. The median changes are significant at 1% and 5% respectively.

Overall, there is not much difference between these two subgroups, and firms that went public in 1997 only perform differently from firms that went public in 1998 in net working capital to total assets, and other performance changes are not significantly different from each other. The mean (median) change of net working capital to total assets is 8.11% (4.98%) for firms that went public in 1998 as compared to 13.07% (14.14%) for firms that went public in 1997. The p value of Kruskal-Wallis test reveals that the subgroup difference in net working capital to total assets is significant at the 5% level. The possible reason could be that firms went public in 1997 have greater concern to improve their liquidity as the financial crisis started in Asia in 1997. As mentioned earlier, since Asian financial crisis in effect has small impact on the Chinese domestic-oriented firms, firms went public in 1998 then improve their liquidity position at a smaller extent compared to firms went public in 1997.

8.1.3.2   Comparison of Performance Change by Regulated/Non-Regulated Industry

Table 8.3 presents the comparison of performance changes for firms in regulated versus non-regulated industry. D'Souza (2001) identifies regulated industries as those of electric, gas, water and telecom in comparing companies operating in competitive industries. In this thesis, some other industry categories will be included as regulated industries due to the actual regulation practice in China. For instance, the airlines, airports, automobiles, broadcasting, shipping, ports and steel industries are highly regulated in China and so they are identified as regulated industries.

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Table 8.3 Comparison of Performance Change after IPO for Firms in Regulated versus in Non-Regulated Industry

This table compares empirical results of performance change for firms that are in regulated versus in non-regulated industry. For each performance proxy, it shows the number of observations, the mean and median values during three years before and three years after going public, mean and median change in the proxy's value after versus before going public. Wilcoxon rank sum test is employed to test for significance of change in median values. Kruskal-Wallis test is employed to test the group difference with mean ranks for each subgroup.

Variables	N	Mean Before (Median)	Mean After (Median)	Mean Change (Median)	Wilcoxon Z-Statistic for Difference in Median (After-Before)	Kruskal-Wallis Results Mean Rank for Subgroup Regulated	Non-Regulated	KW test 'p' value
Profitability								
ROS (%)								
Non-Regulated	98	.1816 (.1464)	.1090 (.1410)	-.0726 (-.0214)	-3.308 a		65.66	.783
Regulated	29	.2520 (.1496)	.1953 (.1276)	-.0568 (-.0081)	-1.287	63.51		
ROA (%)								
Non-Regulated	98	.1311 (.1172)	.0564 (.0587)	-.0748 (-.0683)	-8.343 a		65.35	.818
Regulated	29	.1538 (.1163)	.0682 (.0649)	-.0856 (-.0546)	-4.292 a	63.59		
ROE (%)								
Non-Regulated	98	.3545 (.3155)	.0385 (.1020)	-.3160 (-.2224)	-8.542 a		60.97	.613
Regulated	29	.3499 (.3283)	.1046 (.1012)	-.2453 (-.2254)	-4.660 a	64.90		
Operating Efficiency								
SAT (%)								
Non-Regulated	98	.9694 (.8121)	.5494 (.4531)	-.4200 (-.3552)	-8.092 a		64.66	.913
Regulated	29	.9293 (.7926)	.5614 (.4217)	-.3679 (-.3864)	-4.314 a	63.81		
Liquidity								
Quick Ratio (%)								
Non-Regulated	98	.8655 (.7823)	1.5281 (1.3398)	.6625 (.4828)	6.710 a		63.97	.995
Regulated	29	1.4320 (1.009)	1.7450 (1.3699)	.3129 (.4988)	3.060 a	64.01		

Table 8.3   Cont'd

Variables	N	Mean Before (Median)	Mean After (Median)	Mean Change (Median)	Wilcoxon Z-Statistic for Difference in Median (After-Before)	Kruskal-Wallis Results Mean Rank for Subgroup Regulated	Non-Regulated	KW test 'p' value
NWCTA (%)								
Non-Regulated	98	.1108 (.1131)	.22129 (.2443)	.1105 (.1029)	5.611 a	63.54	65.55	.796
Regulated	29	.0854 (.0943)	.2023 (.2162)	.1169 (.1284)	3.471 a			
Leverage LEV1 (%)								
Non-Regulated	98	.5887 (.6138)	.3977 (.3756)	-.1910 (-.1957)	-7.748 a	64.10	63.66	.954
Regulated	29	.5531 (.5981)	.3472 (.3781)	-.2060 (-.2047)	-4.357 a			
LEV2 (%)								
Non-Regulated	98	.1946 (.1487)	.0765 (.0411)	-.1182 (-.0926)	-6.044 a	64.32	62.93	.859
Regulated	29	.2225 (.1945)	.1056 (.0501)	-.1169 (-.1164)	-3.219 a			
Output Real Sales								
Non-Regulated	98	.7188 (.7192)	1.6474 (1.4206)	.9285 (.7098)	8.060 a	64.77	61.41	.667
Regulated	29	.7017 (.6844)	1.4576 (1.3224)	.7559 (.6717)	4.703 a			

a. Indicates significance at the one percent level.
b. Indicates significance at the five percent level.
c. Indicates significance at the ten percent level.

All performance changes are significant in either regulated or non-regulated industry, and median changes are significant at the 1% level. However it is noted that the mean (median) value of return on sales in regulated industry falls from 25.20% (14.96%) to 19.53% (12.76%), which is not significant at all. This may indicate that firms in regulated industry can maintain certain profitability such as return on sales after going public as they are backed by advantageous government regulations.

Overall, there is no significant difference between firms in regulated and non-regulated industries. The p values of Kruskal-Wallis test of subgroup difference suggests that whether firms are in regulated or non-regulated industry, they do not perform very differently after going public.

8.1.3.3 Comparison of Performance Change by Dominant Shareholder

Table 8.4 table presents the comparison of performance changes for firms with dominant shareholder of state and legal person. Since there are only four private and employee dominated firms respectively in the main sample, these eight firms are omitted from the comparison, leaving only state and legal persons as dominant shareholders. As shown in the table 8.4, all changes in performance proxies are significant, but no Kruskal-Wallis test p value is significant. The p values of Kruskal-Wallis test of subgroup difference suggest that whether a firm's dominant shareholder is state or legal person, they do not perform differently after going public. In other words, the presence of dominant shareholder does not affect firms' performance changes after going public.

Table 8.4 Comparison of Performance Change After IPO for Firms with Dominant Shareholder of State & Legal Person

This table compares empirical results of performance change for firms with dominant shareholder of state and legal person. For each performance proxy, it shows the number of observations, the mean and median values during three years before and three years after going public, mean and median change in the proxy's value after versus before going public. Wilcoxon rank sum test is employed to test for significance of change in median values. Kruskal-Wallis test is employed to test the Group difference with mean ranks for each subgroup. Since there are only 4 firms with dominant private and employee shareholders respectively, these 8 firms are omitted from the comparison.

Variables	N	Mean Before (Median)	Mean After (Median)	Mean Change (Median)	Wilcoxon Z-Statistic for Difference in Median (After-Before)	Kruskal-Wallis Results Mean Rank for Subgroup — State	LP	KW test 'p' value
Profitability **ROS (%)** State	87	.1912 (.1438)	.1269 (.1416)	-.0644 (-.0230)	-3.217 a	59.55	61.22	.815
Legal Person	32	.2007 (.1480) (.1042)	.1240 (.1282) (.1335)	-.0767 (-.0198) (-.0471)	-1.870 c			
ROA (%) State	87	.1390 (.1224)	.0578 (.0591)	-.0813 (-.0727)	-7.936 a	57.21	67.59	.145
Legal Person	32	.1384 (.1130)	.0620 (.0597)	-.0764 (-.0625)	-4.637 a			
ROE (%) State	87	.3467 (.3309)	.0542 (.0992)	-.2926 (-.2466)	-8.071 a	57.52	66.75	.195
Legal Person	32	.3411 (.3058)	.0418 (.1048)	-.2993 (-.1943)	-4.918 a			
Operating Efficiency **SAT (%)** State	87	1.0137 (.8551)	.5735 (.4560)	-.4402 (-.3778)	-7.817 a	58.06	65.28	.311
Legal Person	32	.8631 (.7731)	.5203 (.4282)	-.3429 (-.2980)	-4.357 a			
Liquidity **Quick Ratio (%)** State	87	1.0531 (.7915)	1.5912 (1.3589)	.5381 (.4491)	5.798 a	59.16	62.28	.662
Legal Person	32	.8848 (.8350)	1.5318 (1.3192)	.6470 (.5295)	4.039 a			

Table 8.4 **Cont'd**

Variables	N	Mean Before (Median)	Mean After (Median)	Mean Change (Median)	Wilcoxon Z-Statistic for Difference in Median (After-Before)	Kruskal-Wallis Results Mean Rank for Subgroup State	LP	KW test 'p' value
NWCTA (%)								
State	87	.1212 (.1090)	.2144 (.2325)	.0933 (.0918)	4.850 a	57.09	67.91	.129
Legal Person	32	.0767 (.1185)	.2323 (.2469)	.1556 (.1691)	4.095 a			
Leverage LEV1 (%)								
State	87	.5821 (.6111)	.3889 (.3894)	-.1931 (-.1848)	-7.402 a	60.85	57.69	.657
Legal Person	32	.5837 (.6308)	.3779 (.3736)	-.2058 (-.2348)	-4.581 a			
LEV2 (%)								
State	87	.2169 (.1740)	.0858 (.0504)	-.1312 (-.1072)	-6.010 a	59.41	61.59	.760
Legal Person	32	.1662 (.1410)	.0703 (.0236)	-.0960 (-.1001)	-3.272 a			
Output Real Sales								
State	87	.7537 (.7327)	1.5856 (1.3734)	.8319 (.6717)	7.542 a	58.17	64.97	.341
Legal Person	32	.6266 (.6615)	1.6020 (1.3875)	.9754 (.7977)	4.899 a			

a. Indicates significance at the one percent level.
b. Indicates significance at the five percent level.
c. Indicates significance at the ten percent level.

8.1.3.4 Comparison of Performance Change by Sector

Table 8.5 presents the comparison of performance changes for firms within sectors of industrial and miscellaneous. Since there are only two firms in the commercial sector and ten firms in the utility sector, these twelve firms are omitted from the comparison, leaving only industrial and miscellaneous sectors. As shown in the table 8.5, the mean (median) value of deterioration in return on sales is -5.33% (-1.24%) for firms in the industrial sector as compared to -11.35% (-2.67%) for firms in the miscellaneous sector. The median changes are significant at 10% and 1% respectively, and Kruskal-Wallis p value is also significant at 10% level, which may indicate that the sector is an important factor in changes in return on sales. The p values of Kruskal-Wallis test of subgroup difference in other performance proxies changes are insignificant. Therefore, firms from industrial and miscellaneous sectors do not perform significantly differently from each other, except in return on sales. Since firms from miscellaneous sector are more diversified than firms from industrial sector are, it might be more difficult for the former to improve return on sales if corporate management in terms of strategic and financial management and corporate governance are incapable to deal with more complicated business activities.

Table 8.5 Comparison of Performance Change after Initial Public Offering for Firms within Sector of Industrial & Miscellaneous

This table compares empirical results of performance change for firms within sector of industrial and miscellaneous. For each performance proxy, it shows the number of observations, the mean and median values during three years before and three years after going public, mean and median change in the proxy's value after versus before going public. Wilcoxon rank sum test is employed to test for significance of change in median values. Kruskal-Wallis test is employed to test the group difference with mean ranks for each subgroup. Since there are only 2 firms from commercial sector and 10 firms from utility sector, these 12 firms are omitted from the comparison.

Variables	N	Mean Before (Median)	Mean After (Median)	Mean Change (Median)	Wilcoxon Z-Statistic for Difference in Median (After-Before)	Kruskal-Wallis Results Mean Rank for Subgroup IND	MIS	KW test 'p' value
Profitability								
ROS (%)								
Industrial	82	.1682 (.1451)	.1149 (.1350)	-.0533 (-.0124)	-1.656 c	61.29	49.82	0.095c
Miscellaneous	33	.2101 (.1260)	.0966 (.1262)	-.1135 (-.0267)	-3.133 a			
ROA (%)								
Industrial	82	.1304 (.1172)	.0608 (.0606)	-.0696 (-.0638)	-7.841 a	59.29	54.79	.512
Miscellaneous	33	.1338 (.1149)	.0543 (.0586)	-.0795 (-.0755)	-4.526 a			
ROE (%)								
Industrial	82	.3582 (.3202)	.0583 (.1023)	-.2999 (-.2228)	-8.282 a	59.44	54.42	.466
Miscellaneous	33	.3528 (.3542)	.0395 (.0964)	-.3133 (-.2392)	-4.874 a			
Operating Efficiency								
SAT (%)								
Industrial	82	.9026 (.8568)	.4928 (.4538)	-.4099 (-.3863)	-7.841 a	56.15	62.61	.347
Miscellaneous	33	1.1997 (.7257)	.7248 (.4737)	-.4749 (-.3103)	-4.178 a			
Liquidity								
Quick Ratio (%)								
Industrial	82	.8562 (.7215)	1.5473 (1.3160)	.6911 (.5295)	6.074 a	60.00	53.03	.311
Miscellaneous	33	1.0773 (.9769)	1.6569 (1.5387)	.5796 (.4050)	3.482 a			

Table 8.5 Cont'd

Variables	N	Mean Before (Median)	Mean After (Median)	Mean Change (Median)	Wilcoxon Z-Statistic for Difference in Median (After-Before)	Kruskal-Wallis Results Mean Rank for Subgroup IND	MIS	KW test 'p' value
NWCTA (%)								
Industrial	82	.0952 (.1039)	.2322 (.2548)	.1370 (.1349)	5.632 a	61.07	50.36	.119
Miscellaneous	33	.1537 (.1693)	.2348 (.2489)	.0808 (.0731)	2.089 b			
Leverage LEV1 (%)								
Industrial	82	.5935 (.6138)	.3793 (.3728)	-.2142 (-.2146)	-8.062 a	57.32	59.70	.729
Miscellaneous	33	.6016 (.6462)	.4017 (.4134)	-.1999 (-.2059)	-4.526 a			
LEV2 (%)								
Industrial	82	.2165 (.1748)	.0849 (.0434)	-.1316 (-.1109)	-5.333 a	55.20	64.95	.156
Miscellaneous	33	.1556 (.1275)	.0710 (.0384)	-.0846 (-.0645)	-1.945 c			
Output Real Sales								
Industrial	82	.7343 (.7306)	1.5648 (1.3942)	.8305 (.7030)	7.841 a	56.06	62.82	.326
Miscellaneous	33	.6555 (.6522)	1.7916 (1.4826)	1.1361 (.9827)	4.874 a			

a. Indicates significance at the one percent level.
b. Indicates significance at the five percent level.
c. Indicates significance at the ten percent level.

The above analysis shows that dominant shareholder and regulated/non-regulated industry do not play significant role in firms' performance changes after going public. Firms that went public in 1997 and in 1998 perform differently in net working capital to total asset; firms from industrial and miscellaneous sectors perform differently in return on sales. Therefore IPO year and sector are added as explanatory variables in later regression analysis since they have potential explanatory power in determining firms' performance changes after going public.

Till now, main sample firms' performance changes are examined. As discussed in Chapter 6, since sample firms are drawn within a two-year IPO window period, it is difficult to distinguish firms' performance changes are due to IPO effect or economic effect. In the next section, further 100 non-IPO firms listed with main sample firms are examined to identify whether the IPO effect does exist.

8.2   Performance Change Analysis (Minor Sample Firms)

Following the same procedures as those of main samples, the purpose to analyse the minor sample firms is to identify the IPO effect on the main sample firms. The mean and median values of performance changes of the minor sample are calculated. Then the significance of performance change is tested by Wilcoxon-Signed Rank test. Furthermore, the group difference between minor sample firms and main sample firms is further tested by Kruskal-Wallis test.

8.2.1 Post-1997 versus Pre-1997 Performance Change Results

Table 8.6 presents the results of performance change of minor sample firms.

Table 8.6 Summary Results of Performance Change of Minor Sample Firms

This table presents empirical results of performance changes for non-IPO firms listed at Shanghai Stock Exchange at the end of 2001. For each performance proxy, it shows the number of observations, the mean and median values during three years before 1997 and three years after 1997, mean and median changes in performance proxies after versus before 1997. Wilcoxon rank sum test is employed to test for significance of change in median values. Real sales are deflated by consumer price index and normalised on the base year of 1997.

Variables	N	Mean Before (Median)	Mean After (Median)	Mean Change (Median)	Wilcoxon Z-Statistic for Difference in Median (After-Before)	Percentage of Firms With Performance Change	Sign test Z statistics (Significance of Percentage)
Profitability							
ROS (%)	100	.2068 (.1153)	.1304 (.0764)	-.0764 (-.038)	-3.834a	73% ↓	-4.5a
ROA (%)	100	.0826 (.0633)	.1728 (.0421)	.0902 (-.0281)	-5.591a	78% ↓	-5.5a
ROE (%)	100	.161 (.1231)	.2844 (.0874)	.1234 (-.0446)	-4.889a	74% ↓	-4.7a
Operating Efficiency							
SAT (%)	100	.6646 (.5149)	3.6204 (.438)	2.9558 (-.089)	-3.909a	66% ↓	-3.1a
Liquidity							
Quick Ratio (%)	100	1.2605 (1.1111)	1.3520 (1.0413)	.0915 (-.0408)	-.536	45% ↓	-.90
NWCTA (%)	100	.1825 (.1651)	.1407 (.1399)	-.0418 (-.0202)	-1.723c	45% ↓	-.90
Leverage							
LEV1 (%)	100	.4512 (.4450)	.4494 (.4512)	-.0017 (.0107)	-.127	44% ↓	1.1
LEV2 (%)	100	.1360 (.0966)	.0929 (.0437)	-.0431 (-.0285)	-3.382a	63% ↑	2.727a
Output							
Real Sales	100	.7288 (.7376)	1.6296 (1.2289)	.9008 (.5481)	6.718a	77% ↑	5.3a

a. Indicates significance at the one percent level.
b. Indicates significance at the five percent level.
c. Indicates significance at the ten percent level.
↓ Declined performance, not as expected.
↑ Improved performance, as expected.

Firms in the minor sample are drawn from all those listed firms at the end of 1998 (excluding firms that went public in 1997 and 1998, which are also main sample firms); and their three year performance after 1997 (from 1998 to 2000) is compared with their three year performance before 1997 (from 1994 to 1996).[58]

As shown in the table 8.6, firms' profitability and operating efficiency deteriorate while output improves after 1997. The mean (median) value of return on sales decreases from 20.68% (11.53%) to 13.04% (7.64%) and the mean (median) value of return on equity drops from 16.1% (12.31%) to 28.44% (8.44%). The mean value of return on assets increases from 8.26% to 17.28% while its median value declines from 6.33% to 4.21%; and the mean value of sales to assets turnover increases from 66.46% to 362.04% while its median value decreases from 51.49% to 43.8%. The increase in mean value of both returns on assets and sales to assets turnover might be the result of a few extremely well performing firms, but their influence is eliminated in median values. The mean (median) value of real sales rises from 0.7288 (0.7376) to 1.6296 (1.2289). In terms of liquidity, the mean value of quick ratio increases from 126.05% to 135.2% (because of outliers), but its median value decreases from 111.1%1 to 104.13%. The mean (median) value of net working capital to total assets decreases from 18.25% (16.51%) to 14.07% (13.99%). Regarding leverage, the mean value of total debt decreases slightly from 45.12% to 44.94%, and the median value increases slightly from 44.50% to 45.12%, which suggests that the total debt does not change much. The mean (median) value of long-term leverage decreases from 13.60% (9.66%) to 9.29% (4.37%) and the decrease in median value is significant at the 1% level, which indicates that even without share issue proceeds, minor firms still can improve their long-term leverage position.

8.2.2 Wilcoxon-Signed Rank test & Sign test Results

Wilcoxon-Signed rank test reveals that deterioration after 1997 for minor sample firms in return on sales, return on assets, return on equity, sales assets turnover and

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[58] In the main sample, 79 (went public in 1997) out of 127 firms (60%) are examined during period from 1994 to 2000, 48 (went public in 1998) out of 127 firms (40%) are examined during period from 1995 to 2001. Based on the fact that the majority of firms in the main sample are examined during 1994 to 2000, minor sample firms are also examined based on this time period.

real sales are significant at the 1% level, and their respective proportion tests are also significant at 1% level. The median changes in quick ratio and total debt are not significant and net working capital to total assets decreases significantly at the 10% level. The non-significant change in quick ratio and significant deterioration in net working capital indicate that minor firms do not have the chance to use IPO proceeds as the main sample firms to improve their short-term liquidity positions. However, with only 45% of firms experience declined performance in both liquidity ratio and net working capital to total assets, the fact that none of these two proportion test is significant further suggests that deterioration in liquidity and leverage are not prevalent in minor sample firms. Meanwhile, with only 44% of firms experiencing increase in total debt level, the proportion test is not significant; which suggests that the increase in total debt is not prevalent in minor sample firms. With 63% of firms experiencing decrease in long-term debt level, the proportion test is significant at the 1% level, which suggests that minor sample firms also manage to reduce their long-term borrowing. In addition, given the non-significant change in total debt ratio, minor sample firms might increase short-term borrowing.

In general, it seems that the minor sample firms also perform badly comparing their three years' performance after 1997 with their three years' performance before 1997. Both profitability and operating efficiency in terms of return on sales, return on assets, return on equity and sales to assets turnover deteriorated, with only improvement in real sales. Meanwhile, the deterioration in liquidity is not prevalent in minor sample firms. In addition, minor sample firms even manage to reduce their long-term debt significantly, but not total debt.

So, what are the differences in performance changes between main sample firms (IPO firms) and minor sample firms (non-IPO firms)? Given the similar seven-year window period or same economic cycle, if main sample firms perform differently from minor sample firms, IPO effect might exist. Otherwise, IPO has no impact on firm performance and main sample firms' performance changes are purely due to economic effect as minor sample firms. In the following section, performance changes of the main sample firms and minor sample firms are compared with each

other to identify the effect of IPO. Since the main sample firms and minor sample firms are two independent groups, group difference is further tested by Kruskal-Wallis test.

8.3 Comparison of Performance Changes between Main Sample Firms & Minor Sample Firms

8.3.1 Initial Comparisons

The results of performance changes of main sample firms in table 8.1 and minor sample firms in table 8.6 are examined again and the comparison of percentage of firms experiencing improved or deteriorated performance and the significance of the proportion test are summarised in table 8.7.

Table 8.7   Initial Comparison of Performance Proxies between Main Sample & Minor Sample Firms

This table compares percentage of firms experiencing expected performance changes and significance of those changes between main sample firms and minor sample firms.

	Main Sample Firms			Minor Sample Firms		
	(%)	(↑/↓)	Sig.	(%)	(↑/↓)	Sig.
Profitability						
ΔROS	66.14% ↓		***	73%	↓	***
ΔROA	92.13% ↓		***	78%	↓	***
ΔROE	95.28% ↓		***	74%	↓	***
Operating Efficiency						
ΔSAT	89.76% ↓		***	66%	↓	***
Liquidity						
ΔQR	81.89% ↑		***	45%	↓	-
ΔNWCTA	76.38% ↑		***	45%	↓	-
Leverage						
ΔLEV1	91.34% ↑		***	44%	↓	-
ΔLEV2	72.44% ↑		***	63%	↑	***
Output						
ΔReal Sales	94.49% ↑		***	77%	↑	***

%: Percentage of firms experience expected performance change.
↑: Improved performance as expected.
↓: Declined performance, not as expected.

Sig.: Significance of proportion of firms experiencing that particular performance change.
*** Indicates significance at the one percent level.
**   Indicates significance at the five percent level.
*   Indicates significance at the ten percent level.
Note:
Based on the survey study of 257 firms listed at the Shanghai Stock Exchange, Tenev et al (2002) document only 8% of sample firms' tradable shares represent more than 50% of all shares. Similarly, within the main sample in this thesis, only 4 firms are with dominant shareholders of private investors. Therefore both main and minor sample firms share the similar feature of dominant non-tradable state and legal person shares, and the shareholding structure is not considered in performance comparison.

As reported in table 8.7:

- Percentage of firms with deteriorated profitability in terms of return on sales, return on assets and return on equity are 66.14%, 92.13% and 95.28% respectively for main sample firms and these three proportion tests are significant at the 1% level, compared to 73%, 78% and 74% of those of minor sample firms respectively and three proportion tests are also significant at the 1% level. Except that there are 66.14% main sample firms that show deteriorated performance in return on sales compared with 73% of minor sample firms; more main samples firms show deteriorated performance in both return on assets and return on equity. Therefore, for the majority of profitability measures, main sample firms underperform minor sample firms.

- Regarding operating efficiency, 89.76% of main sample firms show decreased sales to assets turnover, while only 66% of minor sample firms perform badly. Therefore, main sample firms underperform minor sample firms in operating efficiency measure.

- For liquidity measures, 81.89% and 76.38% of main sample firms show improved quick ratio and net working capital to total assets and these two proportion tests are both significant at the 1% level. Meanwhile, minor sample firms show no significant deterioration in liquidity measures. As mentioned earlier, main sample firms' liquidity improvement might be due to the share issue proceeds; but without share issue proceeds, minor sample firms do not show significant deterioration in liquidity. In this regard, main sample firms do not outperform minor samples firms in liquidity measures.

- For leverage measures, 91.34% and 72.44% of main sample firms show reduced total debt and long-term debt levels and these two proportion tests are both significant at the 1% level. Meanwhile, minor sample firms show no significant change in total debt but the decrease in long-term debt is significant at the 1% level. In other words, given the non-significant change in total debt, the minor sample firms manage to reduce their long-term debt but have to increase short-term borrowing. Therefore, main sample firms outperform minor sample firms in reducing total debt by simply using share issue proceeds to payback debt, but minor sample firms performance equally well as main sample firms do in reducing long-term debt.

- For output, 77% of minor sample firms show increased real sales compared to 94.49% of main sample firms and both proportion tests are significant at the 1% level. Therefore main sample firms perform better than minor sample firms in output measure do.

8.3.2 Performance Comparison between Main & Minor Sample Firms - Kruskal-Wallis Test Results

The performance of main and minor sample firms is further compared through Kruskal-Wallis test. The performance changes of main and minor sample firms, the respective Wilcoxon signed-rank test results and the Kruskal-Wallis group difference test results are summarised in table 8.8.

Table 8.8 Comparison of Performance Change between Main Sample (IPO Firms) & Minor Sample (Non-IPO Firm)

This table compares empirical results of performance change between main sample and minor sample firms, in other words, between IPO firms and Non-IPO firms. For each performance proxy, it shows the number of observations, the mean and median values during three years before and three years after going public, mean and median change in the proxy's value after versus before going public. Wilcoxon rank sum test is employed to test for significance of change in median values. Kruskal-Wallis test is employed to test the group difference with mean ranks for each subgroup.

Wilcoxon Variables	N	Mean Before (Median)	Mean After (Median)	Mean Change (Median)	Z-Statistic for Difference in Median (After-Before)	Kruskal -Wallis Results Mean Rank for Subgroup		
						Minor	Main	KW test 'p' value
Profitability								
ROS (%)								
Minor	100	.2068 (.1153)	.1304 (.0764)	-.0764 (-.0380)	-3.834 a	105.63	120.59	.088 c
Main	127	.1977 (.1465)	.1287 (.1403)	-.0690 (-.0193)	-3.564 a			
ROA (%)								
Minor	100	.0826 (.0633)	.1728 (.0421)	.0902 (-.0281)	-5.591 a	133.36	98.76	.000 a
Main	127	.1363 (.1165)	.0591 (.0597)	-.0772 (-.0664)	-9.319 a			
ROE (%)								
Minor	100	.1610 (.1231)	.2844 (.0874)	.1234 (-.0446)	-4.889 a	152.24	83.89	.000 a
Main	127	.3554 (.3208)	.0536 (-.1020)	-.2998 (-.2231)	-9.721 a			
Operating Efficiency								
SAT (%)								
Minor	100	.6646 (.5149)	3.62 (-.4380)	2.9558 (-.0890)	-3.909 a	144.67	89.85	.000 a
Main	127	.9603 (.8081)	.5522 (-.4516)	-.4081 (-.3572)	-9.218 a			
Liquidity								
Quick Ratio (%)								
Minor	100	1.2605 (-1.1111)	1.3520 (1.0413)	.0915 (-.0408)	-.536	85.00	136.83	.000 a
Main	127	.9949 (.8113)	1.5776 (1.3589)	.5827 (-.4830)	-7.346 a			

Table 8.8   **Cont'd**

Variables	N	Mean Before (Median)	Mean After (Median)	Mean Change (Median)	Wilcoxon Z-Statistic for Difference in Median (After-Before)	Kruskal-Wallis Results Mean Rank for Subgroup Minor	Main	KW test 'p' value
NWCTA (%)								
Minor	100	.1825 (.1651)	.1407 (.1399)	-.0418 (-.0202)	-1.732 c	84.72		.000 a
Main	127	.1050 (.1088)	.2169 (.2355)	.1120 (.1059)	6.586 a		137.06	
Leverage LEV1 (%)								
Minor	100	.4512 (.4450)	.4494 (.4512)	-.0017 (.0107)	-.127	152.77		.000 a
Main	127	.5805 (.6115)	.3862 (.3764)	-.1944 (-.1959)	-8.886 a		83.47	
LEV2 (%)								
Minor	100	.1360 (.0966)	.0929 (.0437)	-.0431 (-.0285)	-3.382 a	129.13		.002 a
Main	127	.2010 (.1624)	.0831 (.0445)	-.1179 (-.0945)	-6.848 a		102.09	
Output Real Sales								
Minor	100	.7288 (.7376)	1.6296 (1.2289)	.9008 (.5481)	6.718 a	102.43		.019 b
Main	127	.7149 (.7156)	1.6040 (1.3733)	.8891 (.7033)	9.300 a		123.11	

a. Indicates significance at the one percent level.
b. Indicates significance at the five percent level.
c. Indicates significance at the ten percent level.

Wilcoxon signed rank test shows that both main and minor firms experience performance deterioration in return on sales, return on assets, return on equity, sales assets turnover, and real output, and they are all significant at the 1% level. For instance, the median value of return on sales decreases from 11.53% to 7.64% and from 14.65% to 14.03% for minor and main sample firms respectively. The median value of return on assets decreases from 6.33% to 4.21% and from 11.65% to 5.97% for minor and main sample firms respectively. In leverage measures, the median value of long-term debt decreases from 9.66% to 4.37% and from 16.24% to 4.45% for minor and main sample firms respectively, and they are significant at the 1% level, which suggests that main sample firms experience larger long-term debt reduction. The improvement in quick ratio is significant at 1% level for main sample firms, and there is no significance deterioration found in minor sample firms. The reduction in total debt is significant at 1% level for main sample firms, and there is no significance increase in total debt found in minor sample firms. The results might suggest that main sample firms use share issue proceeds to pay short-term debt.

The Kruskal-Wallis test results reveal that the main sample and the minor sample are significantly different from each other in all performance measures. Minor sample firms outperform main sample firms in return on assets, return on equity and sales assets turnover, with mean ranks of 133.36, 152.24 and 144.67 compared to 98.76, 83.39 and 89.85 of main sample firms respectively. The p values suggest that the differences between the two samples are significant at the 1% level.

But minor sample firms underperform main sample firms in return on sales and real sales, with mean ranks of 105.63 and 102.43 compared to 120.59 and 123.11 of main sample firms respectively. The p values suggest that the differences between these two samples firms are significant at the 10% and 5% level respectively.

Minor sample firms underperform main sample firms in liquidity and leverage measures, with quick ratio and net working capital mean ranks of 85 and 84.72 compared to 136.83 and 137.06 of the main sample firms, and the group differences

are significant at the 1% level. Regarding leverage, minor sample firms have higher total debt and long-term debt mean ranks of 152.77 and 129.13 compared to 83.47 and 102.09 of main sample firms, and the group differences are significant at the 1% level for both total and long-term debt. The above results are summarised in the following table 8.9.

Table 8.9 Summary of Comparison of Performance Change between Main Sample Firms & Minor Sample Firms

This table compares mean ranks (in Table 8.8, pp160-161) of performance proxies between main sample firms and minor sample firms, the significance of such differences in ranks and the winners are with higher ranks. The results are in bold where the winner is the minor sample.

	Minor Sample Rank	Main Sample Rank	Sig. of difference	Winner (Main/Minor)
Profitability				
ΔROS	105.63	120.59	*	MAIN
ΔROA	**133.36**	**98.76**	***	**MINOR**
ΔROE	**152.24**	**83.89**	***	**MINOR**
Operating Efficiency				
ΔSAT	**144.67**	**89.85**	***	**MINOR**
Liquidity				
ΔQR	85.00	136.83	***	MAIN
ΔNWCTA	84.72	137.06	***	MAIN
Leverage				
ΔLEV1	152.77	83.47	***	MAIN
ΔLEV2	129.13	102.09	***	MAIN
Output				
ΔReal Sales	102.43	123.11	**	MAIN

*** Indicates significance of group difference at 1% level.
** Indicates significance of group difference at 5% level.
* Indicates significance of group difference at 10% level.

Table 8.9 indicates that:

- Minor sample firms perform better in most of profitability and operating efficiency measures in terms of return on assets, return on equity and sales to assets turnover, which suggests that minor sample firms are more capable of

producing return for their shareholders, generating cash from assets and providing higher sales assets efficiency.

- Main sample firms outperform minor sample firms in return on sales and real sales, but the difference between main sample firms and minor sample firms are only at 10% and 5% respectively. When comparing their respective mean ranks, minor sample firms do not perform very differently from main sample firms in both return on sales and real sales, given the fact that output is an approximate measure of firm performance compared to profitability measures. In this context, newly listed firms normally embark on new investments using share issue proceeds, which may result in slight better performance for main sample firms in both sales and return on sales.

- Main sample firms perform better in liquidity and leverage than minor sample firms and group difference in quick ratio, net working capital to total assets, total debt and long-term debt are all significant at the 1% level, which may be mainly attributable to the fact that main sample firms use issue proceeds to repay their short-term and long-term debts to improve their liquidity and leverage positions.

Therefore the results suggest that IPO does have effect on firm performance. As expected, it improves liquidity and reduces debt, but fails to improve firms' profitability and operating efficiency.

8.4   Performance Change Analysis Summary

8.4.1   Findings

The overall results suggest that, for the newly privatised Chinese firms, not as expected, their profitability and operating efficiency performance deteriorate, while liquidity, leverage and output performance improve as predicted after IPO. Specifically, return on sales, return on assets, return on equity and sales to total assets drop after IPO while quick ratio, net working capital and real sales all increase and total debt and long-term debt ratios decrease. The possible explanation could be that for newly listed firms, share issue proceeds might partially fund new investments and partially pay the firms' short-term and long-term debts, and therefore the firms' real sales (output) will improve and leverage will be reduced anyway. While profitability

and efficiency measures, such as return on sales, return on equity, return on assets and sales to assets turnover, are true benchmarks (not absolute measures) and do not necessarily improve as more cash are injected into the newly listed firms. Their improvement is based on whether a firm can generate sound net profits to deliver good return on sales, return on equity and return on assets. In addition, firms with dominant shareholder of state and legal person do not perform differently; as well as firms from regulated and non-regulated industries. It is not known why firms went public in 1997 have significant higher net working capital to total assets than firms went public in 1998 do. The possible reason could be that firms went public in 1997 have greater concern to improve their liquidity as the financial crisis started in Asia in 1997. It is also not known why firms from industrial sector produce significant higher return on sales than firms from miscellaneous sector do. The possible explanation is that since firms from miscellaneous sector are more diversified than firms from industrial sector are, it might be more difficult for the former to improve return on sales if corporate management and corporate governance are not mature enough to deal with more complicated business activities.

Through examining the performance differences between the main sample firms and minor sample firms, it is found that minor sample firms (non-IPO firms) and main sample firms (IPO firms) do not show the same performance pattern and group differences are significant for all performance measures. Specifically, main sample firms underperform minor sample firms in three important profitability and efficiency measures – return on assets, return on equity, sales assets turnover. Main sample firms performing better than minor sample firms in return on sales and real sales might be the results of expanded businesses and subsequent improved output. Main sample firms' good performance in liquidity and leverage could be the consequence of issue proceeds in exchange of debts. In sum, main sample firms do not perform better than minor sample firms do, or IPO firms do not perform better than non-IPO firms do. Given the same economic conditions, IPO does not bring positive instead of negative effect on firms' overall performance. The results suggest that IPO firms' post-IPO performance is worse than their pre-IPO performance. Even compared with non-IPO firms, they underperform in most profitability and operating

efficiency measures, with mainly improvements in liquidity and leverage. Therefore going public does not help the newly privatised firms to perform better. Therefore the results suggest that IPO does have effect on firm performance. As expected, it improves liquidity and reduces debt, but fails to improve firms' profitability and operating efficiency.

8.4.2 Comparison of Findings between this Thesis & other Privatisation Studies

The findings of this thesis in performance changes are not consistent with major empirical studies comparing post-privatisation versus pre-privatisation performance changes for firms privatised via share issue privatisation, with just some consistency with one recent country study on China, but not across all performance proxies. In these share issue privatisation studies, newly privatised firms mainly show improvement in efficiency and profitability, and reduction in leverage.

Megginson et al (1994) conduct international empirical analysis of 61 newly privatised companies via share issue privatisation from 18 countries, and their results document strong performance improvements in return on sales, return on assets and return on equity after going public. The improvement is also reflected on higher employment and higher dividend payout, which are not measured in this thesis due to lack of data. Boubakri and Cosset (1998) compare average three years post-privatisation to pre-privatisation financial and operating performance of 79 firms from 21 developing countries over the period 1980-1992. They document significant post-privatisation increases in output (real sales), operating efficiency, profitability, capital investment spending, dividend payments, and employment – as well as significant decreases in leverage. D'Souza et al (1999) document significant improvement in return on sales and return on assets, but not return on equity in their study of performance of 61 companies from 18 countries. D'Souza et al (2001) provide evidence of performance improvement of a sample of 118 companies privatised through share offering from 29 countries, and the performance improvement on sales, employment, capital expenditure and debt level are also significant. It seems common that after going public, firms' profitability, operating

efficiency, real output and liquidity will rise and leverage level will fall and short-term and long-term borrowing will drop. Dewenter and Malatesta (2001) calculate the levels of the performance measures over different periods around privatisation and draw inferences from changes in the levels. Their sample includes 63 global firms listed in the Privatisation International data set and the study of Megginson et al (1994). In addition to profitability measures of ROS, ROE, ROA, and labor intensity measure, they calculate two more leverage measures in terms of debt to equity and long-term debt to equity. They confirm the results of Megginson et al (1994) who report significant increases in return on sales and return on assets during the three years after privatisation, but most of the profitability measures are actually lower during the three years following privatisation than during the three years before privatisation. They argue that government may effectively restructure at least some firms before selling them[59]; therefore if government restructure firms and improve their performance before privatisation, then the improvements cannot be attributed to the change of ownership.

In one empirical study on China employing MNR methodology, Chen et al (2000) examines 275 share issue privatisations during 1991 in 1995 (most of the listings took place in 1992 and 1993) in China. They document that return on assets, return on equity and sales to total assets deteriorate significantly after going public, but return on sales does not change much (slight improvement) and real sales just show modest gains. It is not clear why return on sales and real sales do not change much and the most puzzling one is why real sales do not show substantial gains. In fact newly privatised firms normally expand their businesses by using capital raised from the capital market and their output is expected to go up. The improvement in output does not mean that firms perform better because real sales or output is an absolute performance benchmark, instead firms' output should simply reflect the reality of the economic environment of the country. For instance, from the middle 90's till 2001, China's GDP keeps at around 7% to 8%, which is a good indication of an increase in output of all companies. Since their sample are drawn from IPO firms during the

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[59] One example they give is that Japan National Railways reduced its workforce by approximately 200,000 and was split into seven separate rail companies before any share were sold to investors.

period of 1991 to 1995, where financial accounts of firms that went public early on are less reliable due to loose accounting legislation, therefore selecting these firms in the first place is questionable. This may be part of the reason why firms' return on sales does not change much after going public. If both pre-IPO and post-IPO sales figures were inflated due to poor accounting standards or fabricated by these firms at that time, change in sales cannot be correctly observed.

The results of this thesis are not only different from major studies of share issue privatisation, but also different from only country study on China by Chen et al (2000). The major privatisation studies employing MNR methodology and findings of this thesis are summarised in following table 8.10.

Table 8.10 Comparison of Results of Privatisation Studies Employing MNR Methodology

This table compares the results of major studies of share issue privatisation, the only country study on China and the findings of this thesis.

	ROS	ROA	ROE	SALES	LEV1	SAT	Sale/Emp	INV	EMP	DIV
Megginson et al (1994)	+	+	+	+	-	n/a	+	+	0	+
Boubakri et al (1998)	+	+	+	+	-	n/a	+	+	0	+
D'Souza et al (1999)	+	+	0	+	+	n/a	+	0	0	+
D'Souza et al (2001)	+	n/a	n/a	+	-	n/a	+	+	0	n/a
Dewenter et al (2001)	+	+	-	n/a	-	n/a	n/a	n/a	n/a	n/a
China:										
Chen et al (2000)	0	-	-	0	-	-	n/a	+	n/a	n/a
Thesis' Results	-	-	-	+	-	-	**n/a**	**n/a**	**n/a**	**n/a**

+: represents significant increase in performance proxies
-: represents significant decrease in performance proxies
0: represents no change or non-significant change in performance proxies
n/a: not measured in that particular study
(ROS, ROA, ROE, SALES, LEV1 and SAT represent return on sales, return on assets, return on equity, real sales, total debt ratio and sales to assets turnover, and these are part of performance proxies measured in this thesis. Sale/EMP, INV, EMP and DIV represent employee sales efficiency, real capital expenditures, employment and dividend payout respectively and they are not measured in this thesis due to availability of data.

Megginson et al (1994), Boubakri and Cosset (1998) and D'Souza et al (2001) document significant improvement in real sales after going public for their samples.

In contrast, this thesis finds that return on equity, return on assets and return on sales do not improve in newly privatised firms in China. Contrary to the results from Chen et al (2000), this thesis further finds that return on sales deteriorates significantly after going public, which is documented as slight improvement by Chen et al (2000). Consistent with Chen et al (2000), the findings of this thesis confirm that operating efficiency in terms of sales assets turnover deteriorated after going public. In regard to real output, consistent with Megginson et al (1994), D'Souza et al (2000), and Boubakri and Cosset (1998), this thesis confirms that firms' real sales do increase significantly after going public, but return on sales deteriorates significantly which indicates poor performance of newly privatised firms. In contrast, Chen et al (2000) document only modest gains in real sales for newly privatised firms in China. The increase in quick ratio and net working capital indicates that share issue proceeds do improve firms' short-term liquidity as they are used to fund new investments. Consistent with Megginson et al (1994), D'Souza et al (2001) and Boubakri and Cosset (1998) and Chen et al (2000), the common finding of this thesis with the privatisation studies mentioned above is that total debt and long-term debt decrease as expected after going public. The drop in total debt and long-term debt suggest that new proceeds be used not only to pay short-term debt to improve short-term liquidity, but also long-term debt.

So, if newly listed firms perform worse after going public in China, what are the determinants in firms' performance changes? In the next chapter, regression analysis is performed to identify the determinants in firms' performance changes after IPO.

Chapter 9   Performance Change Regression Analysis

This chapter presents a performance change regression analysis of main sample firms to identify determinants in firms' performance changes after going public.

9.1   Variables & Hypotheses

In developing performance models, cross-sectional Ordinary Least Squares regression is employed to identify determinants of firms' performance change (post-IPO versus pre-IPO). As discussed earlier in the research methodology, the potential determinants or explanatory variables in performance changes include not only ownership variables, but also other corporate governance variables in the Chinese context, such as human capital, share issue size, board size, executive cross-sitting etc. Then change in performance proxies – ΔPFMs (e.g. ΔROS, ΔROE etc.) – is regressed against the above explanatory variables, and the expected models are as follows:

$$\Delta\text{PFMs} \quad = \quad \beta_0 + \beta_1\text{ST} + \beta_2\text{LP} + \beta_3\text{PLC} + \beta_4\text{EMP} + \beta_5\text{CON} + \beta_6\text{HMC}$$
$$+ \beta_7\text{SSIZE} + \beta_8\text{BOD} + \beta_9\text{CRS} + \beta_{10}\text{ASIZE} + \beta_{11}\text{Grouping}$$
$$\text{Variables} + \varepsilon$$

The definition of explanatory and dependent variables of regression models, considerations in model developing and regression results are presented in the following section in detail.

9.1.1 Dependent Variables

Dependent variables ΔPFMs are changes in firms' performance proxies three years after going public versus three years before going public, including:

- profitability measures of change in return on sales (ΔROS), change in return on assets (ΔROA) and change in return on equity (ΔROE);

- output measure of change in real sales (ΔSALES)

- efficiency measure of change in sales assets turnover (ΔSAT);

- liquidity measures of change in working capital to total assets (ΔNWCTA) and change in quick ratio (ΔQR),

- leverage measures of change in total debt (ΔLEV1) and change in long-term debt (ΔLEV2).

Therefore, three profitability models (ΔROS, ΔROA and ΔROE), one output model (ΔSALES), one efficiency model (ΔSAT), two liquidity models (ΔNWCTA and ΔQR), and two leverage models (ΔLEV1, ΔLEV2) are developed respectively.

9.1.2 Independent Variables

As mentioned earlier, firm's ownership structures under study are three years average percentage of share owned by state, legal persons, private individuals and employees respectively. Generally ownership structures of newly privatised firms are seldom changed during three years after going public. For instance, Fung et al (2001) document that the mean state ownership is 0.57, 0.55 and 0.56 in 1998, 1999 and 2000 respectively for listed firms in China. Therefore the average three years post-IPO state ownership properly reflects firms' state ownership after IPO. Similarly, the ownership of legal person and private ownership are calculated in the same way. Another concern is employee ownership. There are only 36 firms in 127 sample firms with the presence of employee ownership; therefore this explanatory variable is transformed into dummy variable to improve its explanatory power.

Table 9.1 defines ownership variables and other explanatory variables employed in performance change regression analysis. These variables are based on theoretical and empirical grounds, such as Herfindahal index of ownership concentration, human capital, issue size, total number of board directors, total number of cross-sitting between directors and executives as well as two category variables of listing year and sector[60].

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[60] These two category variables are based on early analysis of performance changes by group, and it is found listing year and sector may have impact on firms' performance changes.

Table 9.1 Definition of Explanatory Variables in Performance Change Regression Analysis

This table defines the explanatory variables in regression analysis of performance changes. These variables are potential determinants of performance change after IPO.

Variables	Proxy for	Empirical Definition
ST	State Ownership	Percentage of shares owned by government after going public
LP	Legal Person Ownership	Percentage of shares owned by legal person after going pubic
PLC	Private Ownership	Percentage of shares owned by private individuals after going public
CON	Concentration Ratio	Herfindahal index of ownership concentration is the sum of squared percentage of shares controlled by each top 5 shareholder
HMC	Human Capital	Percentage of members of senior management team holding university degree
SSIZE	Share Issue Size	Issue proceeds from IPO, which is used to test the impact on firm performance
ASIZE	Total Assets Size	The total assets of the firm at the year end before IPO, used to control firm size
BOD	Directors on Board	Total numbers of board members
CRO	Cross-sitting	Total number of executive members sitting on board as board directors
EMP	Employee Ownership	Dummy variable with value=1 if firms with employee ownership, value=0 if without.
YR	Listing Year	Dummy variable with value=1 if firms went public in 1997, value=0 if firms went public in 1998.
IND	Industrial/ Non-Industrial Sector	Dummy variable with value=1, if firms are in industrial sector; value=0, otherwise.

Therefore possible explanatory variables are as follows:

ST	=	average three years after going public percentage of shares owned by the government;
LP	=	average three years after going public percentage of shares owned by legal person shareholders;
PLC	=	average three years after going public percentage of shares owned by private investors;
EMP	=	1, if firms with employee ownership; 0, otherwise;
CON	=	Herfindahal index (HI) of ownership concentration of top five shareholders;
HMC	=	percentage of members of senior management team holding university degrees;
SSIZE	=	log of share issue size (in million Chinese Yuan);
BOD	=	total number of board of directors (board size);
CRS	=	total number of senior executives sitting on board as directors;
ASIZE	=	log of total assets of the firm (in million Chinese Yuan) at the year end before going public;
ε	=	regression error term.

The grouping variables – sector and year – are added into regression models as potential independent variables because Kruskal-Wallis test of group difference of performance changes by either sector or year shows significance within the respective subgroups. Therefore the grouping variables are:

YR	=	1, if firms went public in 1997; 0, if firms went public in 1998.
IND	=	1, if firms in industrial sector; otherwise 0.

The statistics of independent variables are summarised in table 9.2.

Table 9.2 Statistics of Explanatory Variables in Performance Regression Models

This table presents statistics of explanatory variables (excluding dummy variables), with mean, median, standard deviation, minimum and maximum values. HMC, BOD, CRS, SSIZE, ASIZE, CON, ST, LP, PLC and EMP represent human capital, board size, cross-sitting as board directors and executives, share issue size, asset issue size, Herfindahal index of ownership concentration, state shares (%), legal person shares (%), private or tradable shares (%) and employee shares (%).

	HMC (%)	BOD (no.)	CRS (no.)	SSIZE* (CYm)	ASIZE* (CYm)	CON (HI)	ST (%)	LP (%)	PLC** (%)	EMP*** (%)	SEMP*** (%)
Mean	0.33	11.22	1.64	345	825	0.287	0.437	0.218	0.305	0.031	0.110
Median	0.31	11	1	260	384	0.273	0.544	0.122	0.300	0	0.073
Std.D	0.17	2.57	1.16	366	2238	0.162	0.286	0.263	0.070	0.074	0.105
Min	0	7	0	4	78	0.035	0	0	0.046	0	0.013
Max	0.88	21	5	2590	23042	0.722	0.954	0.750	0.520	0.368	0.368
Valid Cases	127	127	127	127	127	127	127	127	127	127	36

*   The statistics of SSIZE and ASIZE in this table are in million Chinese Yuan, and in regression analysis, the transformed (log of) share issue size and assets size are used.

**   No data are available to distinguish the percentage of tradable share held by individuals and institutions in this thesis. But based on the survey study of 257 firms listed at the Shanghai Stock Exchange, Tenev et al (2002) document that about 30% of all shares are tradable, which is the same as this thesis. In addition, they also document that at the end of 1999, of the 30% of tradable shares, individuals held 25% and institutions held 5%.

*** EMP represents the statistics of 127 sample firms, and SEMP represents the statistics of a small group of 36 firms that actually have employee ownership.

Table 9.2 summarises the mean, median, standard deviation, minimum and maximum values of each explanatory variable. The median, minimum and maximum values of human capital are 33%, 0 and 88% respectively. Therefore the worst case is that a firm simply does not have any senior management members with a university degree, while the best case is that a firm has 88% of senior management members with university degrees. The education and knowledge level of senior management members is expected to have a profound impact on a firm's performance. Average board size is around 11 directors, and the smallest board size is 7 and the largest size is 21. It is expected that the larger the board size is, the less efficient the board is. Cross-sitting between board and executives is on average no more than two persons for both mean and median values, with minimum of 0 and maximum of 5 persons. It is expected that more cross-sitting would have negative effect on firm performance. Share issue size also varies with average of CY345m, minimum of CY3.8m and maximum of CY2590m[61]. Since IPO proceeds are generally injected into firms for further investment therefore share issue size is employed to predict the impact of cash injection on firm performance. Total assets of the firm at the end of year prior to IPO is employed to control firm size. The mean and median values of total assets are CY825m and CY384m respectively, with the smallest assets size of CY78m and largest of CY23b. Ownership concentration index is around 30%, with minimum of 3.5% and maximum of 72.2%. In terms of ownership structures, the minimum state, legal person and employee ownership are zero respectively, while the maximum values for state, legal person and private ownership are 95.4%, 75% and 52% respectively. Employee ownership is generally very low, and the mean and median values are 3% and 0 respectively, but the maximum value is 36.8%. There are only 36 out of 127 total sample firms with the presence of employee ownership, employee ownership is then transformed into dummy variable in the regression analysis.

9.1.3 Regression Hypotheses

The regression hypotheses are summarised in the following table 9.3.

Table 9.3 Summary of Regression Hypotheses

This table summarises the regression hypotheses in the regression analysis. DVs represent dependent variables (or models) in terms of change in performance proxies, namely ΔROS, ΔROA, ΔROE, ΔSAT, ΔSALES, ΔQR, ΔNWCTA, ΔLEV1and ΔLEV2. IVs represent independent variables in terms of state, private, employee ownership, ownership concentration, human capital, share issue size, board size and cross-sitting between executives and board directors.

DVs / IVs	ΔROS	ΔROA	ΔROE	ΔSAT	ΔSALES	ΔQR	ΔNWCTA	ΔLEV1	ΔLEV2
ST	-	-	-	-	-	-	-	+	+
PLC	+	+	+	+	+	+	+	-	-
EMP	+	+	+	+	+	+	+	+	+
CON	+	+	+	+	+	+	+	-	-
HMC	+	+	+	+	+	+	+	-	-
SSIZE	+	+	+	+	+	+	+	-	-
BOD	-	-	-	-	-	-	-	+	+
CRS	-	-	-	-	-	-	-	+	+

Note: +: Represents significant positive relationship between independent and dependent variables
        -: Represents significant negative relationship between independent and dependent variables

As shown in the table 9.3, it is expected that state ownership is negatively associated with profitability, efficiency and liquidity measures, but also positively associated with leverage. Private ownership and legal person ownership are expected to improve profitability, efficiency and liquidity performance, as well as to reduce leverage. The presence of employee ownership is expected to improve profitability, efficiency and liquidity performance, but also increases both total and long-term borrowing. It is also expected that ownership concentration, human capital and share issue size are positively associated with all performance measures except negatively associated with leverage. Board size and cross-sitting of executives as board directors are expected to have negative impact on profitability, efficiency and liquidity performance, but are positively associated with leverage.

In model developing, each dependent variable is regressed against all explanatory variables, including grouping variables; and assets size is used to control firm size.

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[61] The exchange rate between British Pound and Chinese Yuan is around 1:13 in June 2003.

9.2 Considerations in Model Developing

Nine performance change regression models are developed to predict the explanatory power of those explanatory variables defined in table 9.1 and to identify the major drivers in each performance change proxy or dependent variable. Prior to model developing, some issues need to be clarified.

9.2.1 Linear Models

Before running the regression, the scatterplots of dependent variable by each explanatory variable are examined to determine whether linear relationship is present and linear model is a reasonable model for these variables. The scatterplots results show that linear relationships are present.

9.2.2 Regression Methods

There are different regression methods in entering explanatory variables in SPSS, such as hierarchical, forced entry, and stepwise methods. In hierarchical regression, explanatory variables are selected based on past work and known predictors should be entered into the model first in order of their importance in predicting dependent variable. Forced entry is a method in which all explanatory variables are forced into the model simultaneously, and this method relies on good theoretical reasons for including the chosen explanatory variables. Since there is no literature providing convincing performance determinants in a single country study, therefore stepwise method is employed to explore the relationship between performance changes and explanatory variables. In the stepwise method, an initial model that contains only the constant is defined, then the explanatory variable that has the highest simple correlation with the dependent variable is selected and retained in the model. Then the explanatory variable that can explain the biggest part of remaining variance of dependent variable is selected, and so on. The advantage of stepwise method is that the assumption of no perfect multicollinearity between two or more of the explanatory variables cannot be violated.

9.2.3 Outliers

Outliers are those observations that are far removed from the rest of the observations. Marsh (1990) suggests that there are four possible causes: arising from a procedural error, such as a data entry error or a mistake in coding; an observation that occurs as the result of an extraordinary event, in this case, an explanation exists for the uniqueness of the observation; the extraordinary observations for which the analyst has no explanation; contains observations that fall within the ordinary range of values on each of the variables but are unique in their combination of values across the variables. An observation with large standardised residuals is the potential outlier and is further investigated in this thesis.

9.2.4 Multicollinearity

In multiple regression models, there should be no exact or perfect linear relationship between any of the explanatory variables in the model. Table 9.4 summarises the Pearson correlation matrix of the explanatory variables.

**Table 9.4 Pearson Correlation Matrix of Explanatory Variables
in Performance Regression Analysis**

This table presents correlation matrix of explanatory variables (excluding dummy variables), and Pearson correlation between any two explanatory variables is presented accordingly. HMC, BOD, CRS, SSIZE, CON, ST, LP, PLC and ASIZE represent human capital, board size, cross-sitting as board directors and executives, share issue size, Herfindahal index of ownership concentration, state ownership, legal person ownership, private ownership and assets size.

	HMC	BOD	CRS	SSIZE	CON	ST	LP	PLC	ASIZE
HMC	1								
BOD	.044	1							
CRS	-.001	.070	1						
SSIZE	.210	.092	-.063	1					
CON	.122	.099	.127	.364	1				
ST	.113	.082	.077	.208	.537	1			
LP	-.094	-.022	-.104	-.139	-.327	**-.936**	1		
PLC	-.121	-.118	.030	-.112	-.399	-.224	.061	1	
ASIZE	.208	.103	.009	.577	.378	.297	-.236	-.540	1

Table 9.4 reveals that explanatory variable of state ownership is nearly perfectly correlated with legal person ownership, and the Pearson correlation between the two is -0.936. Both state and legal person shares are non-tradable at stock exchanges and these shares can mainly be transferred between state and legal person shareholders in informal transfer market through negotiation. When state shares are transferred to legal person shareholders, state shareholding reduces while legal person ownership increases. Because of their perfect negative correlation, they can not be both included in the regression analysis. If the effect of dominant shareholder – either state or legal person – on firm performance exists, then a dummy variable has to be used; otherwise one of them can be omitted from analysis. Early results in chapter 8 show that the presence of the dominant shareholder – state or legal person – does not affect firms' performance after IPO, therefore either state or legal person ownership can be eliminated from the regression analysis. In the regression analysis, state ownership is chosen as one of the explanatory variables.

9.2.5 Heteroscedasticity

Heteroscedasticity or unequal variance across observations often occurs in cross sectional studies. Heteroscedasticity leads to inefficiencies, since multiple regression gives equal weight to all observations, which means large residuals have as much weight in the model as small residuals. Therefore heteroscedasticity needs to be tested and corrected to meet the assumption of homoscedasticity that means at each level of the explanatory variable, the variance of the residual terms should be constant and independent of the explanatory variables.

- Test Heteroscedasticity

There are many tests available to detect potential heteroscedasticity, such as RESET test, White test and so on. According to Maddala (1992), if the sample is not particularly large (with 127 firms in this thesis), Goldfeld-Quandt test is best employed to test the null hypothesis of homoscedasticity. Before testing for heteroscedasticity, Pindyck and Rubinfeld (1998) suggest that a useful first procedure is the informal check of the pattern of the residuals to see whether estimated error variances (squared residuals) differ from observation to observation.

For cross section models, they suggest that a plot of the error variances against one or several explanatory variables (X_i) or against the predicted value of independent variable ($\hat{Y}$) will serve the purpose. For instance, if error variances differ across explanatory variable X_i, then Goldfeld-Quandt test can be employed to test the null hypothesis of homoscedasticity. In Goldfeld-Quandt test, sample firms are split into two groups – one corresponding to large values of an explanatory X_i and the other corresponding to small values of the explanatory variable X_i, fit separate regressions for each and then apply an F-test to test the equality of error variances[62]. If the error variances associated with each regression line are approximately equal, the homoscedasticity assumption cannot be rejected, but if the error variances are substantially different, the null hypothesis of homoscedasticity can be rejected. Therefore, the Goldfeld-Quandt test can easily be applied to the general linear model by ordering the observations by the magnitude of one of the explanatory variables. But Maddala (1992) suggests that if there are two or more independent variables and none of them can provide a satisfactory ordering, then $\hat{Y}$, the predicted value of dependent variable Y, can be used.

- Correct Heteroscedasticity

In order to correct heteroscedasticity, Weighted Least Square procedure is employed and this estimation procedure is accomplished by weighting the original data and then performing ordinary least-squares estimation on the transformed model. As suggested by Pindyck and Rubinfeld (1998), if original model is specified as:

$$\boxed{Y_i = \beta_1 + \beta_2 X_{2i} + \beta_3 X_{3i} + \ldots + \beta_k X_{ki} + \varepsilon_i} \quad \text{(A)}$$

Where: Y_i - Independent Variable
β_k: - Coefficients
X_{ki}: - Dependent Variables
ε_i - Error term

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[62] Maddala (1992) suggests omitting some observations in the middle to increase the ability to discriminate between the two error variances. Pindyck and Rubinfeld (1998) suggest that the selection of middle observations to eliminate from the test is arbitrary, for instance, to be one-fifth of the total sample size.

To use weighted least squares in the multiple regression, variables in the original regression model of equation (A) need to be redefined as:

$$Y_i^* = \beta_1^* + \beta_2 X_{2i}^* + \beta_3 X_{3i}^* + \ldots + \beta_k X_{ki}^* + \varepsilon_i^*$$

or equivalently

$$Y_i (1/\sigma_i) = \beta_1 (1/\sigma_i) + \beta_2 (X_{2i}/\sigma_i) + \beta_3 (X_{3i}/\sigma_i) + \ldots + \beta_k (X_{ki}/\sigma_i) + \varepsilon_i (1/\sigma_i)$$

(B)

Now the transformed error term ε_i^* or $\varepsilon_i (1/\sigma_i)$ in equation (B) is homoscedastic and has constant variance: $Var (\varepsilon_i^*) = Var (\varepsilon_i/\sigma_i) = Var (\varepsilon_i) / \sigma_i^2 = \sigma_i^2 / \sigma_i^2 = 1$. Therefore the weighting procedure yields efficient parameter estimators in that the transformed model by construction satisfies constant error variance and heteroscedasticity is corrected and assumption of homoscedasticity is met.

9.3   Regression Results

The following section presents detailed results of five performance models and respective outliers. The five performance change models are profitability models of ΔROS model, ΔROA model, ΔROE model; output model of ΔSALES and leverage model of ΔLEV1 model. There is no significant relationship between long-term leverage and explanatory variables, therefore ΔLEV2 model cannot be developed. The adjusted R^2 are much lower than 20% in the efficiency model of ΔSAT model, liquidity models of ΔQR model and ΔNWC model, therefore they are not presented here[63]. The outliers in each regression model and the Ordinary Least Squares regression results to identify determinants in performance changes are summarised in the following table 9.5 and table 9.6 respectively.

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[63] These three models are summarised in Appendix 9.1 (pp302).

Table 9.5 Summary Statistics of Full Sample Firms and Outliers in Performance Regression Models

This table summarises the statistics of full sample and outliers in five performance regression models: ΔROS, ΔROA, ΔROE, ΔROA, ΔSALES and ΔLEV1. The values of mean, median and standard deviation of each performance proxy of full sample firms are presented (e.g. ROSb represents pre-IPO return on sales, ROSa represents post-IPO return on sales and ΔROS represent change in return on sales). Then the pre-IPO, post-IPO and changes in performance proxies of outliers in each model are presented. INDM is the classification of types of core business of the firms defined by Datastream.

Panel A: ΔROS Model

Full Sample (127)	ROSb	ROSa	ΔROS		
Mean	0.198	0.139	-0.069		
Median	0.146	0.140	-0.019		
Std. Deviation	0.183	0.294	0.297		

Outliers (case number)	ROSb	ROSa	ΔROS	Sector	INDM
33	0.098	-2.4932	-2.5909	Industrial	Electronic Equipment
47	0.499	-1.1549	-1.6535	Miscellaneous	Electronic Equipment
63	1.1230	0.2955	-0.8275	Industrial	Steel
74	0.989	0.192	-0.797	Miscellaneous	Textiles + Leather

Panel B: ΔROA Model

Full Sample (127)	ROAb	ROAa	ΔROA		
Mean	0.136	0.059	-0.077		
Median	0.116	0.060	-0.066		
Std. Deviation	0.090	0.038	0.083		

Outliers (case number)	ROAb	ROAa	ΔROA	Sector	INDM
38	0.501	0.064	-0.437	Miscellaneous	Broadcasting
46	0.694	0.146	-0.548	Industrial	Chemicals, Speciality
56	0.460	0.081	-0.379	Utility	Construction

Panel C: ΔROE Model

Full Sample (127)	ROEb	ROEa	ΔROE		
Mean	0.353	0.054	-0.300		
Median	0.321	0.102	-0.223		
Std. Deviation	0.237	0.326	0.389		

Outliers (case number)	ROEb	ROEa	ΔROE	Sector	INDM
33	0.140	-2.757	-2.897	Industrial	Electronic Equipment
47	0.528	-1.996	-2.524	Miscellaneous	Electronic Equipment
58	2.387	0.107	-2.280	Industrial	Farming and Fishing
92	0.107	-0.751	-0.859	Industrial	Paper

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Table 9.5   Cont'd

Panel D: ΔSALES Model

Full Sample (127)	SALEb	SALEa	ΔSALE		
Mean	0.715	1.604	0.889		
Median	0.716	1.373	0.703		
Std. Deviation	0.272	0.803	0.886		

Outliers (case number)	SALEb	SALEa	ΔSALE	Sector	INDM
25	0.544	4.667	4.123	Industrial	Chemical, Advanced
50	0.344	5.169	4.826	Miscellaneous	Computer Hardware
74	0.301	4.181	3.880	Miscellaneous	Textiles + Leather Goods
96	0.936	3.814	2.878	Industrial	Textiles + Leather Goods

Panel E: ΔLEV1 Model

Full Sample (127)	LEV1b	LEV1a	ΔLEV1		
Mean	0.581	0.386	-0.194		
Median	0.611	0.376	-0.196		
Std. Deviation	0.142	0.154	0.160		

Outliers (case number)	LEV1b	LEV1a	ΔLEV1	Sector	INDM
33	0.709	0.922	0.213	Industrial	Electronic Equipment
47	0.441	0.684	0.243	Miscellaneous	Electronic Equipment
108	0.503	0.636	0.133	Utility	Water
61	0.741	0.135	-0.606	Industrial	Electronic Equipment
120	0.687	0.207	-0.480	Industrial	Mining

Table 9.6 Ordinary Least Squares Regression Results to Identify Determinants in Performance Changes

This table presents regression results to identify the sources of performance changes towards a specific direction, namely declined or improved. The dependent variables are change in return on sales, change in return on assets, change in return on equity, change in sales to total assets, change in quick ratio, change in net working capital to total assets, change in total debt level, change in long-term debt level and change in real sales. The independent variables are those defined in Table 9.1 (pp172). T-statistics are in parentheses. R², adjusted R², F values and the number of observations of each model are demonstrated accordingly.

	ΔROS Model	ΔROA Model	ΔROE Model	ΔSAT Model	ΔSALES Model	ΔQR Model	ΔNWCTA Model	ΔLEV1 Model	ΔLEV2 (n/a)
Constant	0.071 (2.034)**	-0.211 (-3.847)***	-0.279 (-2.043)**	0.077 (0.559)	0.382 (0.570)	2.36 (4.456)***	0.120 (1.896)*	-0.09 (-0.805)	X
ST	0.031 (0.380)	-0.038 (-0.421)	-0.003 (-0.028)	-0.004 (-0.038)	-0.063 (-0.759)	0.060 (0.655)	-0.122 (-1.404)	0.038 (0.418)	X
PLC	0.034 (0.414)	0.245 (3.089)***	0.385 (1.914)*	-0.851 (-2.343)**	1.873 (2.215)**	0.008 (0.076)	0.103 (1.181)	-0.450 (-2.665)***	X
EMP	0.006 (0.070)	0.023 (2.181)**	0.096 (3.099)***	-0.073 (-0.689)	0.041 (0.492)	-0.148 (-1.638)	-0.031 (-0.338)	0.084 (3.074)***	X
CON	-0.008 (-0.099)	-0.037 (-0.327)	-0.169 (-1.764)*	-0.635 (-3.847)***	-0.066 (-0.744)	0.114 (1.202)	-0.029 (-0.328)	-0.129 (-1.130)	X
HMC	0.086 (2.029)**	0.131 (1.596)	0.079 (1.024)	-0.058 (-0.661)	1.069 (3.228)***	-0.017 (-0.189)	-0.012 (-0.144)	-0.003 (-0.033)	X
SSIZE	0.030 (0.351)	-0.078 (-5.031)***	-0.163 (-4.139)***	-0.141 (-1.552)	0.147 (1.457)	0.159 (1.497)	-0.001 (-0.009)	-0.078 (-2.549)**	X
BOD	-0.013 (-4.876)***	-0.050 (-0.604)	0.035 (0.447)	0.105 (1.223)	0.078 (3.679)***	-0.049 (-1.851)*	-0.009 (-1.748)*	0.017 (3.630)***	X

Table 9.6 Cont'd

	ΔROS Model	ΔROA Model	ΔROE Model	ΔSAT Model	ΔSALES Model	ΔQR Model	ΔNWCTA Model	ΔLEV1 Model	ΔLEV2 (n/a)
CRS	-0.027 (-0.331)	-0.097 (-1.184)	-0.027 (-0.358)	0.077 (0.890)	-0.017 (-0.210)	-0.015 (-0.175)	-0.051 (-0.593)	0.118 (1.436)	X
ASIZE	0.115 (1.374)	0.09 (4.822)***	0.139 (3.125)***	0.063 (0.597)	-0.530 (-3.130)***	-0.453 (-2.550)**	-0.096 (-1.084)	0.043 (0.348)	X
YR	0.115 (1.406)	0.004 (0.047)	-0.049 (-2.076)**	-0.046 (-0.522)	0.026 (0.318)	0.073 (0.813)	0.063 (2.397)**	-0.081 (-0.967)	X
IND	0.037 (2.506)**	0.018 (1.861)**	0.097 (1.285)	-0.102 (-1.177)	-0.038 (-0.479)	0.059 (0.676)	0.072 (2.714)***	-0.092 (-1.139)	X
R^2	0.214	0.258	0.359	0.115	0.274	0.085	0.115	0.234	X
Adjusted R^2	0.194	0.226	0.326	0.10	0.250	0.070	0.093	0.208	X
F Values	10.773	8.186	10.843	7.853	11.155	5.579	5.180	8.957	X
Observations	123	124	123	124	123	123	124	122	X

*** Indicates significance at the one percent level.
** Indicates significance at the five percent level.
* Indicates significance at the ten percent level.
x: Indicates that the relationship does not exist.

9.3.1 Profitability Models

Three profitability models include change in return on sales (ΔROS), change in return on assets (ΔROA) and change in return on equity (ΔROE).

9.3.1.1 ΔROS Model –Change in Return on Sales Model

Δ**ROS** = **0.071** + 0.031ST + 0.034PLC + 0.006EMP - 0.008CON + **0.086HMC**
          (2.034)   (0.380)   (0.414)   (0.070)   (-0.099)   (2.029)

          + 0.03SSIZE - **0.013BOD** - 0.027CRS + 0.115ASIZE + 0.115YR + **0.037IND**
               (0.351)   (-4.876)   (-0.331)   (1.374)   (1.406)   (2.506)

R^2 = 0.214   **Observations: 123**
Adjusted R^2 = 0.194   **F = 10.773   Sig. = 0.000**

(Equation 9.1)

In developing the model, cases 33, 47, 63 and 74 are outliers and eliminated in the regression model because their presence violates the assumption of constant variance across predicted ΔROS. These outliers have large standardised residuals of -33.979, -20.806, -10.145 and -9.221 respectively. Further investigation confirms that these four firms are in electronic equipment, steel and textiles businesses. Cases 33 and 47 deliver negative return on sales during post-IPO years, and cases 63 and 74 perform extremely well during pre-IPO years compared to their post-IPO years, which lead to extreme deteriorated changes in return on sales compared to their pre-IPO performance, as shown in panel A of table 9.5 (pp182).

The scatterplots between model error variance and predicted values of change in return on sales (ΔROS) and between model error variance and explanatory variables reveal that model error variances have been constant at all levels of predicted value of ΔROS. The following figure 9.1 demonstrates the scatterplots between model error variance and predicted value of ΔROS.

Figure 9.1 Scatterplots between Model Error Variance and Predicted Value of Change in Return on Sales (ΔROS)

This figure demonstrates that the assumption of homoscadasticity is met since model error variances are constant across predicted values. Cases labelled as 33, 47, 63, 74 are four omitted cases with large standardised residuals.
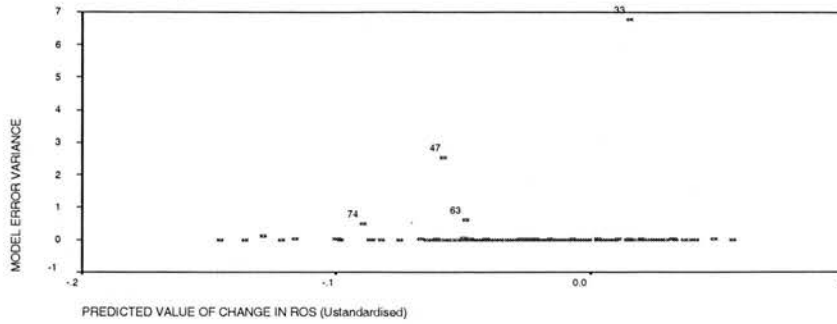
The four omitted outliers with large standardised residuals are labelled in figure 9.1. As a result of omission of these four outliers, the model error variances are constant as predicted values of ΔROS increase and the assumption of homoscadasticity is met.

The model suggests that board size, human capital and industrial sector are the three significant explanatory variables in explaining change in return on sales. As expected, board size has significant negative relationship with return on sales change and increasing one board member leads to 0.013 decrease in return on sales change. As expected, human capital plays a positive role in return on sales improvement, and 1% increase in human capital leads to 0.086% increase in return on sales improvement. It is also identified that if firms are from the industrial sector, they tend to outperform firm from non-industrial sector by 0.037 in return on sales improvement.

9.3.1.2   ΔROA Model –Change in Return on Assets Model

$$\Delta ROA = -\mathbf{0.211} - 0.038ST + \mathbf{0.245PLC} + \mathbf{0.023EMP} - 0.037CON + 0.131HMC$$
$$\quad\ (-3.847)\ (-0.421)\quad (3.089)\quad\ \ (2.181)\quad\ \ (-0.327)\quad\ \ (1.596)$$

$$\quad -\mathbf{0.078SSIZE} - 0.050BOD - 0.097CRS + \mathbf{0.09ASIZE} + 0.004YR + \mathbf{0.018IND}$$
$$\quad\quad (-5.031)\quad\ \ (-0.604)\quad\ (-1.184)\quad\ \ (4.822)\quad\ \ (0.047)\quad\ \ (1.861)$$

R^2 = 0.258   Observations: 124
Adjusted R^2 = 0.226   F = 8.186   Sig. = 0.000

(Equation 9.2)

In developing model, cases 38, 46, and 56 are three outliers and are eliminated in the regression model because their presence violates the assumption of constant variance across predicted ΔROA. These outliers have large standardised residuals of -5.071, -8.385 and -5.194 respectively. Further investigation confirms that these three firms are in broadcasting, chemicals and construction businesses. These three firms perform extremely well during pre-IPO years, which leads to extreme deteriorated changes in return on equity compared to their post-IPO performance as shown in panel B of table 9.5 (pp182).

The scatterplots between model error variance and predicted values of change in return on assets (ΔROA) and between model error variance and explanatory variables reveal that model error variances have been constant at all levels of predicted value of ΔROA. Figure 9.2 demonstrates the scatterplots between model error variance and predicted value of ΔROA.

Figure 9.2 Scatterplots between Model Error Variance and Predicted Value of Change in Return on Assets (ΔROA)

This figure demonstrates that the assumption of homoscadasticity is met since model error variances are constant across predicted values. Cases labelled as 38, 46, and 56 are three omitted cases with large standardised residuals.
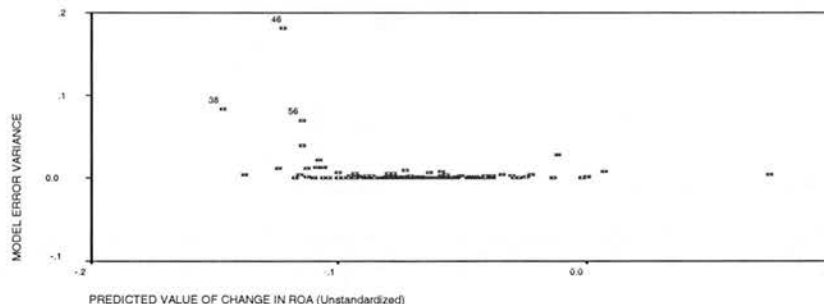
The three omitted cases with large standardised residuals are labelled in figure 9.2. As a result of omission of these three outliers, the model error variances are constant as predicted values of ΔROA increase, and the assumption of homoscadasticity is met.

The model suggests that share issue size, assets size, private ownership, the presence of employee ownership and the industrial sector are five significant explanatory variables. Unexpected, share issue size has negative relationship with return on

assets, and 1% increase in share issue size leads to 0.078% decrease in return on assets change. As predicted, private ownership is positively correlated with return on assets improvement, in which 1% increase in private ownership leads to 0.245% increase in return on assets improvement. Firms with employee ownership outperform firms without employee ownership by 0.023 in return on assets improvement. It is found that larger firms tend to perform better than smaller firms, and 1% increase in assets size leads to 0.09% increase in return on assets change. Finally, firms from industrial sector outperform firms from non-industrial sectors by 0.018 in return on assets improvement.

9.3.1.3 ΔROE Model –Change in Return on Equity Model

$$\Delta ROE = -\, 0.279 - 0.003ST + \textbf{0.385PLC} + \textbf{0.096EMP} - \textbf{0.169CON} + 0.079HMC$$
$$\quad\quad (-2.043) \quad (-0.028) \quad (1.914) \quad\quad (3.099) \quad\quad (-1.764) \quad\quad (1.024)$$

$$\quad - \textbf{0.163SSIZE} + 0.035BOD - 0.027CRS + \textbf{0.139ASIZE} - \textbf{0.049YR} + 0.097IND$$
$$\quad\quad (-4.139) \quad\quad (0.447) \quad\quad (-0.358) \quad\quad (3.125) \quad\quad (-2.076) \quad (1.285)$$

R^2 = 0.359   Observations: 123
Adjusted R^2 = 0.326   F = 10.843   Sig. = 0.000

(Equation 9.3)

In developing the model, cases 33, 47, 58 and 92 are outliers and are eliminated in the regression model because their presence violates the assumption of constant variance across predicted ΔROE. These outliers have large standardised residuals of -22.937, -18.420, -16.737 and -6.949 respectively. Further investigation confirms that these four firms are in electronic equipment, farming and fishing and paper businesses. Cases 33, 47 and 92 deliver negative return on equity during the post-IPO years and case 58 performs extremely well during pre-IPO years, which leads to extreme deteriorated changes in return on equity compared to their pre-IPO performance, as shown in panel C of table 9.5 (pp182).

The scatterplots between model error variance and predicted values of change in return on equity (ΔROE) and between model error variance and explanatory variables reveal that model error variances have been constant at all levels of predicted value of ΔROE. Figure 9.3 demonstrates the scatterplots between model error variance and predicted value of ΔROE.

**Figure 9.3 Scatterplots between Model Error Variance and Predicted
Value of Change in Return on Equity (ΔROE)**

This figure demonstrates that the assumption of homoscadasticity is met since model error variances are constant across predicted values. Cases labelled as 33, 47, 58 and 92 are four omitted cases with large standardised residuals.

PREDICTED VALUE OF CHANGE IN ROE (Unstandardised)
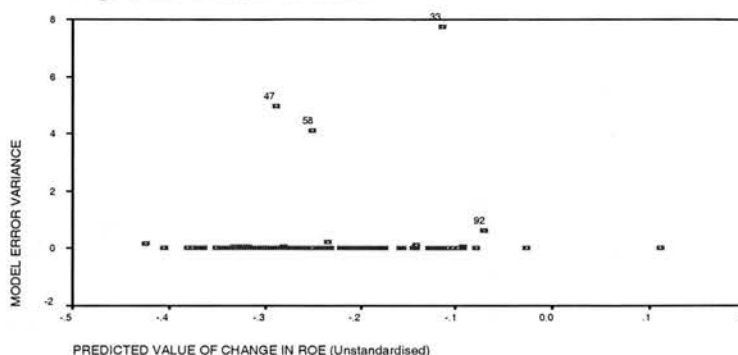
The four omitted outliers with large standardised residuals are labelled in the figure 9.3. As a result of omission of these four cases, the model error variances are constant as predicted values of ΔROE increase, and assumption of homoscadasticity is met.

The model suggests that share issue size, assets size, the presence of employee ownership, private ownership, IPO year and ownership concentration are six significant explanatory variables in the model. As expected, private ownership is positively associated with return on equity change and 1% increase in private ownership leads to 0.385% increase in return on equity improvement. Meanwhile firms with the presence of employee ownership outperform firms without employee ownership by 0.096 in return on equity improvement. Unexpected, ownership concentration is negatively associated with return on equity change, and 1% increase in ownership concentration leads to 0.169% decrease in return on equity. It is also unexpected that share issue size is negatively associated with return on equity change, where 1% increase in share issue size contributes to 0.163% decrease in return on equity. The model also reveals that larger firms outperform smaller firms significantly in return on equity improvement, and 1% increase in assets size would lead to 0.139% increase in return on equity improvement. In addition, firm went public in 1997 underperform firms went public in 1998 by 0.049 in return on equity improvement.

In profitability models, state ownership does not have significant influence on firm performance. As expected, private ownership, the presence of employee ownership and assets size are positively correlated with return on assets and return on equity improvement. The results indicate that the pressure from private shareholders and employees does improve firm performance in return on assets and return on equity. It is unexpected that share issue size is negatively associated with return on assets and return on equity improvement, which is puzzling because larger share issue size is supposed to boost firms' profitability given the fact that all issue proceeds are injected into firms. The possible explanation could be that firms might have a tendency to over-invest as they receive more free cash from the financial market. Firm size does matter in performance and larger firms outperform small firms in both return on assets and return on equity improvement. The importance of private ownership, the presence of employee ownership, share issue size and assets size suggests that they are the main profitability drivers in newly listed firms. In addition, firms from industrial sector outperform firms from non-industrial sectors in return on sales and return on assets improvement. Unexpected, ownership concentration is significant negatively associated with return on equity improvement. As predicted, human capital is positively associated with return on sales improvement and board size is negatively associated with return on sales improvement.

9.3.2 Output & Leverage Models

One output model of change in real sales (ΔSALES) and one leverage model of change in return on total debt (ΔLEV1) are presented in following section.

9.3.2.1 ΔSALES Model –Change in Real Sales Model

$$\Delta\textbf{SALES} = 0.382 - 0.063\text{ST} + \textbf{1.873PLC} + 0.041\text{EMP} - 0.066\text{CON} + \textbf{1.069HMC}$$
$$\quad\;\;(0.570)\;\;(-0.759)\;\;\;(2.215)\qquad(0.492)\qquad(-0.744)\qquad\;(3.228)$$

$$+\;0.147\text{SSIZE} + \textbf{0.078BOD} - 0.017\text{CRS} - \textbf{0.53ASIZE} + 0.026\text{YR} - 0.038\text{IND}$$
$$\quad(1.457)\qquad\;(3.679)\qquad(-0.210)\qquad(-3.130)\qquad(0.318)\qquad(-0.479)$$

R^2 =   0.274   Observations: 123
Adjusted R^2 = 0.250   F = 11.155   Sig. = 0.000

(Equation 9.4)

In developing the model, cases 50, 74, 25, and 96 are outliers and are eliminated in the regression model because their presence violates the assumption of constant variance across predicted ΔSALES. These outliers have large standardised residuals of 7.167, 5.391, 5.277 and 3.898 respectively. Further investigation confirms that these firms are in chemical, computer hardware and textiles businesses. These four firms increase sales dramatically during post-IPO years, which leads to their extreme improvement in real sales compared to their pre-IPO performance, as shown in panel D of table 9.5 (pp183).

The scatterplots between model error variance and predicted values of change in sales (ΔSALES) and between model error variance and explanatory variables reveal that model error variances have been constant at all levels of predicted value of ΔSALES. Figure 9.4 demonstrates the scatterplots between model error variance and predicted value of ΔSALES.

Figure 9.4 Scatterplots between Model Error Variance and Predicted Value of Change in Real Sales (ΔSALES)

This figure demonstrates that the assumption of homoscadasticity is met since model error variances are constant across predicted values. Cases labelled as 50, 74, 25, and 96 are four omitted cases with large standardised residuals.
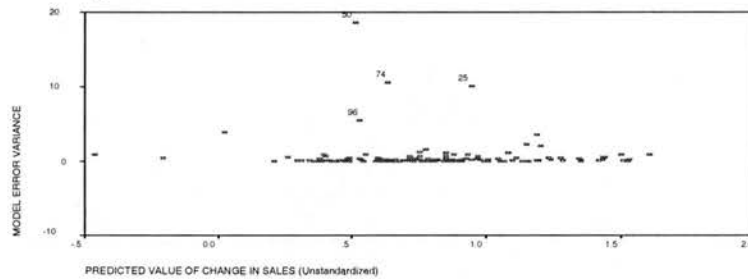
The four omitted cases with large standardised residuals are labelled in figure 9.4. As the result of omission of these four outliers, the model error variances are constant as predicted values of ΔSALES increase, and the assumption of homoscadasticity is met.

The model suggests that assets size, board size, human capital and private ownership are four significant explanatory variables. As expected, private ownership is positively correlated with Real Sales improvement and 1% increase in private

ownership leads to 1.873% increase in Real Sales improvement. Both human capital and board size are positively associated with Real Sales improvement, and 1% increase in human capital leads to 1.069% increase in Real Sales improvement and increasing one board member contributes to 0.078 increase in Real Sales improvement respectively. Human capital is expected to improve output because better managers can manage firms better and then improve real sales. The unexpected result that board size is positively associated with sales improvement might indicate that larger board size might provide better network information and marketing channels associated with the directors sitting on board. It is also found that larger firms underperform smaller firms in Real Sales improvement, and 1% increase in assets size contributes to 0.53% decrease in Real Sales improvement.

9.3.2.2 ΔLEV1 Model –Change in Total Debt Model

$$
\begin{aligned}
\Delta LEV1 = {}& -0.09 - 0.038ST - \mathbf{0.450PLC} + \mathbf{0.084EMP} - 0.129CON - 0.003HMC \\
& (-0.805)\ (-0.418)\quad (-2.665)\qquad (3.074)\qquad (-1.130)\qquad (-0.033) \\[6pt]
& -\mathbf{0.078SSIZE} + \mathbf{0.017BOD} + 0.118CRS + 0.043ASIZE - 0.081YR - 0.092IND \\
& \quad (-2.549)\qquad (3.630)\qquad (1.436)\qquad (0.348)\qquad (-0.967)\quad (-1.139)
\end{aligned}
$$

R^2 = 0.234	Observations: 122
Adjusted R^2 = 0.208	F = 8.957 Sig. = 0.000

(Equation 9.5)

In developing the model, cases 33, 47, 61, 108 and 120 are outliers and are eliminated in the regression model because their presence violates the assumption of constant variance across predicted ΔLEV1. These outliers have large standardised residuals of 3.280, 3.602, -3.114, 2.817, and -2.989 respectively. Further investigation confirms that these firms are in electronic equipment, water and mining businesses. In contrast to debt reduction of most firms, cases 33, 47 and 108 experience large increase in total borrowing while cases 61 and 120 experience large debt reduction during post-IPO years, which leads to the extreme decreased or increased total debt level compared to their pre-IPO period. These outliers are shown in panel E of table 9.5 (pp183).

The scatterplots between model error variance and predicted values of change in total debt (ΔLEV1) and between model error variance and explanatory variables reveal that model error variances have been constant at all level of predicted value of ΔLEV1. Figure 9.5 demonstrates the scatterplots between model error variance and predicted value of ΔLEV1.

Figure 9.5 Scatterplots between Model Error Variance and Predicted Value of Change in Total Debt (ΔLEV1)

This figure demonstrates that the assumption of homoscadasticity is met since model error variances are constant across predicted values. Cases labelled as 33, 47, 61, 108 and 120 are five omitted cases with large standardised residuals.
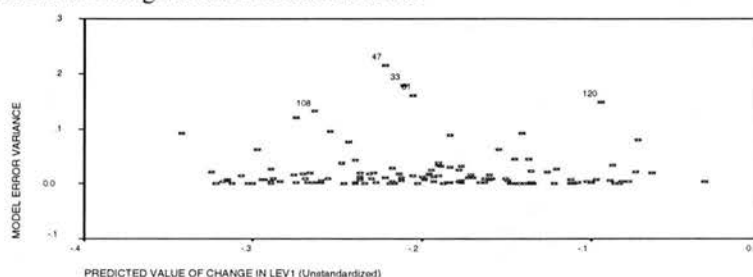
The five omitted cases with large standardised residuals are labelled in the figure 9.5. As the result of omission of these outliers, the model error variances are constant as predicted values of ΔLEV1 increase, and the assumption of homoscadasticity is met.

The ΔLEV1 model suggests that the board size, share issue size, the presence of employee ownership and private ownership are four significant explanatory variables. As expected, board size is positively correlated with total debt level, and increasing one board director leads to 0.017 increase in total debt. A larger board size contributes to a higher total borrowing, which might be due to the free ride of responsibility within the boards of directors. As expected, the presence of employee ownership contributes to 0.084 increase in total debt level, which might suggest that employee shareholders prefer borrowing instead of equity financing due to the fear of share dilution as the result of increased equity financing of the firms. As predicted, private ownership and share issue size are negatively correlated with total borrowing, and 1% increase in share issue size and private ownership lead to 0.078% and 0.45% decrease in total debt respectively. The reasons could be that private shareholders are

generally against borrowing and share issue proceeds are used to reduce the total debt.

9.4 Performance Change Regression Summary

9.4.1 Outliers[64]

As shown in table 9.5 (pp182-183), there are in total 20 outliers in five panels. Taking into account the overlapping of outliers in different models, there are in effect 16 firms that appear as outliers in these models. With these outliers, 11 firms are from the industrial sector, seven from the miscellaneous sector and two from the utility sector. In the industrial sector, there are four firms in electronic equipment business, two firms are chemical companies and there is one firm in each of farming, mining, textiles, paper and steel business. In the miscellaneous sector, there are two firms in each of electric equipment and textiles businesses and one firm from each of computer hardware and broadcasting business. In the utility sector, one firm is a construction company and the other is a water company. Therefore the outliers are from different sectors with wide coverage of different businesses. The reason for these firms to be outliers is simply because they either extremely out-perform or under-perform the majority of firms by a wide margin.

9.4.2 Findings

The findings of regression analysis are summarised in table 9.7.

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[64] Due to nature of the data, the observations dropped in each equation are not exactly the same. It is recognised that some other approaches might be used, for instance, some practitioners would drop the same observations in all equations.

Table 9.7 Summary of Regression Results

This table summarises the regression results in the regression analysis. DVs represent dependent variables (or models) in terms of change in performance proxies, namely ΔROS, ΔROA, ΔROE, ΔSAT, ΔSALES, ΔQR, ΔNWCTA, ΔLEV1and ΔLEV2. IVs represent independent variables in terms of state, private, employee ownership, ownership concentration, human capital, share issue size, board size and cross-sitting between executives and board directors. ASIZE, YR and IND are three grouping variables of assets size, IPO year and industrial sector.

DVs \\ IVs	ΔROS	ΔROA	ΔROE	ΔSAT	ΔSALES	ΔQR	ΔNWCTA	ΔLEV1	ΔLEV2
ST	0	0	0	0	0	0	0	0	x
PLC	0	+	+	-	+	0	0	-	x
EMP	0	+	+	0	0	0	0	+	x
CON	0	0	-	-	0	0	0	0	x
HMC	+	0	0	0	+	0	0	0	x
SSIZE	0	-	-	0	0	0	0	-	x
BOD	-	0	0	0	+	-	-	+	x
CRS	0	0	0	0	0	0	0	0	x
ASIZE	0	+	+	0	-	-	0	0	x
YR	0	0	-	0	0	0	+	0	x
IND	+	+	0	0	0	0	+	0	x

Note: +: Represents significant positive relationship between independent and dependent variables
   -: Represents significant negative relationship between independent and dependent variables
   0: Represents non-significant relationship between independent and dependent variables
   x: Represents non-existent relationship between dependent and independent variables

The regression results suggest that the most important performance drivers are private ownership, the presence of employee ownership, share issue size, board size and asset size.

- Private ownership is one of the most important performance drivers and is significantly positively associated with most profitability and output improvement. It has a significant positive relationship with return on assets, return on equity and sales changes, which may indicate that private investors does impose pressure on firms externally and subsequently help to improve firms profitability and output. Meanwhile it is also negatively associated with total long-term debt change, which might suggest that private investors favour less borrowing.

- The presence of employee ownership is significantly positively associated with return on assets and return on equity, which might indicate that employee ownership impose pressure on firms internally and help to improve profitability. It also has significant positive relationship with total debt level, which might suggest that employee ownership encourage borrowing because equity financing will dilute their shares.

- Share issue size is another important factor that affects firms' performance changes. It is negatively associated with return on assets and return on equity, which might indicate that as more funds are raised from the capital market, the potential for misuse of IPO funds is higher, and firm performance deteriorates subsequently. Share issue size is also negatively associated with total debt, which could be the result of debt payment by share issue proceeds and subsequently lower total debt level.

- Board size is negatively associated with return on sales, but positively correlated with real sales improvement, which may indicate that real sales can be improved through board directors' personal network, but the profitability of the firms remains poor. Larger board size contributes to higher total borrowing because of the free rider of responsibility within the board directors.

- Assets size is negatively correlated with sales, which might indicate that larger firms perform worse than smaller firms do in sales improvement. Meanwhile assets size is positively associated with return on assets. Given higher total assets and lower sales improvement, larger firms might be in a better position in controlling costs – either through economies of scale or their monopoly position – to improve their return on assets performance. Assets size is also positively associated with return on equity, and the reason could also be the cost control or economies of scale by larger firms.

The are some less important explanatory variables, such as human capital, ownership concentration etc. Human capital shows its positive correlation with return on sales and real sales improvement. Firms from industrial sector outperform firms from non-industrial sector in return on sales and return on assets improvement. Herfindahal ownership concentration index is only negatively associated with return on equity

and the significance is at 10%, which might indicate that ownership concentration plays limited role in improving firm performance. Firm went public in 1997 underperform firms went public in 1998 in return on equity improvement.

9.4.3 Comparison of Findings between this Thesis & Other Privatisation Studies

Chen et al (2000) develop cross-sectional regression models to explain the changes in performance from pre-privatisation to post-privatisation by examining 275 privatisations made during the period 1991 to 1995 at stock exchanges in China. The dependent variables are the changes in performance from pre-privatisation to post-privatisation. Independent variables include the change in GNP per capital (from the three years pre-privatisation to the three years subsequent to privatisation) to control the state of the economy; foreign ownership and ownership structure (percentage ownership by the state, legal person and private shareholders). Control variables include market capitalisation of the firms at the date of the listing (to control firm size), stock exchange (Shanghai or Shenzhen), sector and year of listing. The major variables of interest are the existence of foreign shareholders and the relative ownership stakes of the state and of individuals. Nevertheless, the results show that the model fits are low.

Different from Chen et al (2000), this thesis employs total assets size to control firm size instead of market capitalisation of the firms at the time of listing. In addition, this thesis incorporates some corporate governance variables in the regression models, such as human capital of senior management, cross-setting of executives as board directors and share issue size to explain the role of corporate governance in performance changes. The comparisons of the regression results between Chen et al (2000) and this thesis are summarised in the following table 9.8. Table 9.8 shows that this thesis improves R^2 and provides a better understanding of the determinants in performance changes of newly privatised firms in China.

Table 9.8 Comparison of Regression Results of Privatisation Studies in Identifying Sources in Performance Changes

This table compares regression results of privatisation studies in identifying determinants in performance changes after privatisation. Comparable regression models with their respective significant explanatory variables and R^2 are presented accordingly.

Models	Significant Explanatory Variables	R^2 *
ΔROS		
Chen et al (2000)	Foreign Ownership, Market Capitalisation Size, Sector	0.141
Thesis	Human Capital, Board Size, Sector	0.214
ΔROA		
Chen et al (2000)	x	0.061
Thesis	Private Ownership, Presence of Employee Ownership, Share Issue Size, Assets Size, Sector	0.258
ΔROE		
Chen et al (2000)	Stock Exchange, Sector	0.081
Thesis	Private Ownership, Presence of Employee Ownership, Ownership Concentration, Share Issue Size, Assets Size Listing Year	0.359
ΔSALES		
Chen et al (2000)	State Ownership, Sector, Listing Year	0.089
Thesis	Private Ownership, Human Capital, Board Size, Assets Size	0.274
ΔLEV1		
Chen et al (2000)	Foreign Ownership, Private Ownership, Listing Year	0.121
Thesis (2003)	Private Ownership, Presence of Employee Ownership Share Issue Size, Board Size	0.234

* Chen et al (2000) provide only R^2 instead of adjusted R^2, therefore only R^2 are compared.
x: Represents that there is no significant independent variables in the regression models.

In summary, the analysis shows that firms' performance deteriorate after IPO, and key determinants of performance changes are private ownership, the presence of employee ownership, share issue size, board size and assets size. Subsequently one question arises: How does the stock market incorporate firms' accounting performance into their respective share prices? To what extent can stock market discipline management through valuing firms' financial performance? Chapter 10 further analyses firms' post-IPO performance, in which firms' post-IPO market performance against post-IPO accounting performance is explored to answer above question.

Chapter 10 Post-IPO Performance Analysis: Main Sample Firms

This chapter presents the analysis of the main sample firms' post-IPO accounting performance and the regression analysis of post-IPO market performance (share price return) against post-IPO accounting performance. It is expected that main sample firms perform differently during the post-IPO three years within each group of IPO year, regulated/non-regulated industry, sector and dominant shareholder and the subgroup difference is tested by Kruskal-Wallis test. Firms' share price return (Re) is then regressed against accounting performance – including post-IPO supplementary and post-IPO fundamental accounting performance proxies, and it is expected that share price returns should at least reflect firms' profitability performance.

10.1   Post-IPO Performance of Main Sample Firms

10.1.1 Post-IPO performance Proxies

The post-IPO three years performance proxies examined are defined in the following table 10.1.

Table 10.1   Definition of Post-IPO Performance Proxies

This table presents the definition of all post-IPO performance proxies examined. Supplementary performance proxies include both accounting and market performance measures only available for post-IPO years. Fundamental performance proxies include accounting measures available for both pre-IPO and post-IPO years. For instance, CETA represents post-IPO performance proxy of capital expenditure to assets; MBR represents post-IPO performance proxy of market to book value of equity; ROSa represents post-IPO performance proxy of return on sales, and so on.

		Supplementary Performance Proxies
		Accounting Performance Proxies
CETAa	=	average three years post-IPO capital expenditure to assets;
CETSa	=	average three years post-IPO capital expenditure to sales;
CFMa	=	average three years post-IPO cash flow margin.
		Market Performance Proxies
MBR	=	average three years post-IPO market/book value of equity
PE	=	average three years post-IPO price/earning ratio
Re	=	average three years post-IPO share price return
		Fundamental Performance Proxies
ROSa	=	average three years post-IPO return on sales;
ROAa	=	average three years post-IPO return on assets;
ROEa	=	average three years post-IPO return on equity;
SATa	=	average three years post-IPO sales to total assets;
SALESa	=	average three years post-IPO sales;
QRa	=	average three years post-IPO quick ratio;
NWCTAa	=	average three years post-IPO net working capital to total assets;
LEV1a	=	average three years post-IPO total debt ratio;
LEV2a	=	average three years post-IPO long-term debt ratio;

10.1.2 Testable Predictions

It is expected that Kruskal-Wallis tests of subgroup difference of post-IPO performance are significant. For both fundamental and supplementary performance proxies, firms went public in 1997 and 1998 perform significantly differently; firms from industrial and miscellaneous sectors perform significantly differently; firms with dominant shareholder of state and legal person performance significantly differently and firms from regulated and non-regulated industry perform significantly differently.

The following section further examines post-IPO performance results – supplementary and fundamental performance proxies accordingly – by IPO year, regulated/non-regulated industry, dominant shareholder and sector.

10.1.3 Post-IPO Supplementary Performance Results

The firms' post-IPO supplementary performance proxies are examined based on four grouping variables of IPO year, regulated/non-regulated industry, sector and dominant shareholder. The results are summarised in the respective tables, with average three years post-IPO cash-related accounting proxies and market performance proxies.

10.1.3.1 Post-IPO Supplementary Performance by IPO Year

The results of post-IPO supplementary performance by IPO year are summarised in the following table 10.2.

Table 10.2 Summary Results of Post-IPO Supplementary Performance Proxies for Firms that Went Public in 1997 versus in 1998 & Kruskal-Wallis Test of Subgroup Difference

This table compares three years supplementary accounting and market performance proxies for firms went pubic in 1997 versus in 1998. For each performance proxy, it shows the number of observations, the average post-IPO three years mean and median values of all firms and firms with different IPO years. Kruskal-Wallis test is employed to test the group difference with mean ranks for each subgroup.

Proxy	Year (IPO)	No.	Mean After IPO (Median)	Kruskal -Wallis Results Mean Rank for Subgroup		
				1998	**1997**	**KW p Value**
MBR		127	1.6236 (1.2831)			
	1998	48	1.4477 (1.3540)			
	1997	79	1.7304 (1.2664)	65.75	62.94	.676
PE		127	17.6081 (13.6554)			
	1998	48	21.00 (15.6204)			
	1997	79	15.5448 (13.2267)	69.04	60.94	.229
Re		127	.2802 (.2366)			
	1998	48	.1918 (.1685)			
	1997	79	.3340 (.3225)	46.88	70.41	.000***
CETSa		127	.2092 (.1339)			
	1998	48	.2295 (.1288)			
	1997	79	.1969 (.1372)	66.77	62.32	.508
CETAa		127	.0711 (.0629)			
	1998	48	.0775 (.0637)			
	1997	79	.0671 (.0612)	67.81	61.68	.363
CFMa		127	.0308 (.0294)			
	1998	48	.0541 (.0491)			
	1997	79	.0166 (.0239)	70.31	60.61	.132

*** Indicates significance at the one percent level.
** Indicates significance at the five percent level.
* Indicates significance at the ten percent level.

Table 10.2 shows that firm went public in 1997 and in 1998 do not performance differently in most supplementary performance proxies. But share price return for firms that went public in 1997 is higher than that for firms went public in 1998. The mean (median) share price return for firms went public in 1997 is 33.40% (32.25%) compared to a mean (median) value of 19.18% (16.85%) for firms that went public in 1998, and the p value of Kruskal-Wallis test suggests that the subgroup difference is significant at the 1% level.

10.1.3.2 Post-IPO Supplementary Performance by Regulated/Non-Regulated Industry

The results of post-IPO supplementary performance by regulated versus non-regulated industry are summarised in the following table 10.3. As reported in table 10.3, there is no p values that are significant in Kruskal-Wallis test. Therefore unexpected, firms in regulated and non-regulated industry do not perform differently from each other in all supplementary performance proxies, including post-IPO market performance proxies and accounting performance proxies.

Table 10.3   Summary Results of Post-IPO Supplementary Performance Proxies for Firms in Regulated versus in Non-Regulated Industry & Kruskal-Wallis Test of Subgroup Difference

This table compares three years supplementary accounting and market performance proxies for firms in regulated versus in non-regulated industry. For each performance proxy, it shows the number of observations, the average post-IPO three years mean and median values of all firms and firms from regulated or non-regulated industry. Kruskal-Wallis test is employed to test the group difference with mean ranks for each subgroup.

Proxy	Regulated (or Non)	No.	Mean After IPO (Median)	Kruskal -Wallis Results Mean Rank for Subgroup		
				Reg	Non-Reg	KW p Value
MBR		127	1.6236 (1.2831)			
	Non-Regulated	98	1.7190 (1.3139)			
	Regulated	29	1.3011 (1.1965)	65.79	57.97	.315
PE		127	17.6081 (13.6554)			
	Non-Regulated	98	17.1469 (13.6472)			
	Regulated	29	19.1665 (14.5896)	62.30	69.76	.337
Re		127	.2802 (.2366)			
	Non-Regulated	98	.2811 (.2370)			
	Regulated	29	.2773 (.2043)	65.19	59.97	.502
CETSa		127	.2092 (.1339)			
	Non-Regulated	98	.2073 (.1400)			
	Regulated	29	.2155 (.1238)	65.45	59.10	.415
CETAa		127	.0711 (.0629)			
	Non-Regulated	98	.0721 (.0651)			
	Regulated	29	.0675 (.0531)	65.01	60.59	.570
CFMa		127	.0308 (.0294)			
	Non-Regulated	98	.0298 (.0318)			
	Regulated	29	.0342 (.0240)	64.16	63.45	.927

*** Indicates significance at the one percent level.
** Indicates significance at the five percent level.
* Indicates significance at the ten percent level.

10.1.3.3 Post-IPO Supplementary Performance by Dominant Shareholder

There are only four private dominated and four employee dominated firms, these eight firms are omitted from the comparison, leaving only state and legal person shareholders.

The results of post-IPO supplementary performance by dominant shareholders are summarised in the following table 10.4. As reported in table 10.4, there is no p values that are significant in Kruskal-Wallis test. Therefore as expected, firms with dominant shareholders of state and legal person do not perform differently from each other in all supplementary performance proxies, including post-IPO market performance proxies and accounting performance proxies.

Table 10.4 Summary Results of Post-IPO Supplementary Performance Proxies for Firms with Dominant Shareholder of State versus Legal Person & Kruskal-Wallis Test of Subgroup Difference

This table compares three years supplementary accounting and market performance proxies for firms with dominant shareholder of state versus legal person. For each performance proxy, it shows the number of observations, the average post-IPO three years mean and median values of all firms and firms with different dominant shareholders. Kruskal-Wallis test is employed to test the group difference with mean ranks for each subgroup.

Proxy	Dominant Shareholder	N	Mean After IPO (Median)	Kruskal-Wallis Results Mean Rank for Subgroup		
				STATE	LP	KW pValue
MBR		127	1.6236 (1.2831)			
	State	87	1.5527 (1.2330)			
	Legal Person	32	1.8555 (1.3690)	58.64	63.69	.479
PE		127	17.6081 (13.6554)			
	State	87	17.258 (13.6554)			
	Legal Person	32	18.0442 (14.1581)	59.00	62.72	.602
Re		127	.2802 (.2366)			
	State	87	.2923 (.2552)			
	Legal Person	32	.2616 (.2076)	61.92	54.78	.317
CETSa		127	.2092 (.1339)			
	State	87	.2004 (.1318)			
	Legal Person	32	.2216 (.1412)	58.95	62.84	.585
CETAa		127	.0711 (.0629)			
	State	87	.0668 (.0629)			
	Legal Person	32	.0800 (.0583)	58.41	64.31	.408
CFMa		127	.0308 (.0294)			
	State	87	.0367 (.0294)			
	Legal Person	32	.0005 (.0207)	61.98	54.63	.303

*** Indicates significance at the one percent level.
** Indicates significance at the five percent level.
***Indicates significance at the ten percent level.

10.1.3.4 Post-IPO Supplementary Performance by Sector

Since there are only two firms in the commercial sector and ten firms in the utility sector, these twelve firms are omitted from the comparison, leaving only industrial and miscellaneous sectors.

The results of post-IPO supplementary performance by sector are summarised in the following table 10.5. As reported in table 10.5, there is no p values that are significant in Kruskal-Wallis test. Therefore unexpected, firms from industrial and miscellaneous sectors do not perform differently from each other in all supplementary performance proxies, including post-IPO market performance proxies and accounting performance proxies.

Table 10.5   Summary Results of Post-IPO Supplementary Performance Proxies for Firms in Sector of Industrial versus Miscellaneous & Kruskal-Wallis Test of Subgroup Difference

This table compares three years supplementary accounting and market performance proxies for firms from industrial versus miscellaneous sector. For each performance proxy, it shows the number of observations, the average post-IPO three years mean and median values of all firms and firms from different sectors. Kruskal-Wallis test is employed to test the group difference with mean ranks for each subgroup.

| Proxy | Sector | N | Mean After IPO (Median) | Kruskal -Wallis Results Mean Rank for Subgroup | | |
				IND	MIS	KW pValue
MBR		127	1.6236 (1.2831)			
	Industrial	82	1.5374 (1.2916)			
	Miscellaneous	33	1.8197 (1.2883)	56.87	60.82	.565
PE		127	17.6081 (13.6554)			
	Industrial	82	17.5010 (13.8397)			
	Miscellaneous	33	18.1091 (13.7080)	56.59	61.52	.473
Re		127	.2802 (.2366)			
	Industrial	82	.2713 (.2252)			
	Miscellaneous	33	.3231 (.2799)	56.65	61.36	.493
CETSa		127	.2092 (.1339)			
	Industrial	82	.1916 (.1350)			
	Miscellaneous	33	.1971 (.1318)	59.30	54.76	.508
CETAa		127	.0711 (.0629)			
	Industrial	82	.0749 (.0683)			
	Miscellaneous	33	.0633 (.0565)	60.34	52.18	.235
CFMa		127	.0308 (.0294)			
	Industrial	82	.0196 (.0313)			
	Miscellaneous	33	.0232 (.0210)	57.78	58.55	.911

*** Indicates significance at the one percent level.
** Indicates significance at the five percent level.
* Indicates significance at the ten percent level.

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Unexpected, firms' post-IPO supplementary performance proxies are not different across grouping variables of IPO year, regulated/non-regulated industry, dominant shareholder and sector. But share price returns (Re) for firms that went public in 1997 and 1998 are significantly different from each other, but not their respective post-IPO supplementary accounting performance (CETSa, CETAa and CFMa).

Subsequently in the following section, firms' post-IPO fundamental performance proxies – such as ROSa, ROAa, ROEa, SATa, SALESa, QRa, NWCTAa, LEV1a and LEV2a[65]) – are also examined to identify whether firms with IPO years of 1997 and 1998 perform differently in the fundamental performance proxies.

10.1.4 Post-IPO Fundamental Performance Results

The following table 10.6 summarises average three years post-IPO fundamental performance proxies and Kruskal-Wallis comparison by IPO year. The results show that three years average post-IPO performance for firms that went public in 1997 and in 1998 are not significantly different from each other. But it is found that firms that went public in 1997 do perform slightly better than firms went public in 1998 in all performance measures in terms of higher ranks in return on sales, return on assets, return on equity, sales assets turnover, real sales, quick ratio and net working capital to total assets, and lower rank in total debt level. Only long-term debt level is almost identical for the two subgroup firms.

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[65] See table 10.1 (pp200) for definition of post-IPO performance proxies.

This table compares three years fundamental performance proxies for firms went public in 1997 versus in 1998. For each performance proxy, it shows the number of observations, the average post-IPO three years mean and median values of all firms and firms with different IPO years. Kruskal-Wallis test is employed to test the group difference with mean ranks for each subgroup.

Proxy	Year (IPO)	N	Mean After IPO (Median)	Kruskal -Wallis Results Rank for Subgroup		
				1998	**1997**	**KW p Value**
ROSa		127	.1287 (.1403)			
	1998	48	.1450 (.1282)			
	1997	79	.1188 (.1420)	60.29	66.25	.376
ROAa		127	.0591 (.0597)			
	1998	48	.0574 (.0517)			
	1997	79	.0601 (.0612)	58.00	67.65	.152
ROEa		127	.0536 (.1020)			
	1998	48	.0795 (.0969)			
	1997	79	.0379 (.1041)	58.58	67.29	.196
SATa		127	.5522 (.4516)			
	1998	48	.5151 (.4540)			
	1997	79	.5747 (.4500)	63.90	64.06	.980
SALESa		127	1.6040 (1.3733)			
	1998	48	1.5314 (1.4052)			
	1997	79	1.6481 (1.3649)	63.40	64.37	.885
QRa		127	1.5776 (1.3589)			
	1998	48	1.5611 (1.3243)			
	1997	79	1.5876 (1.3749)	61.02	65.81	.477

Table 10.6   Cont'd

Proxy	Year (IPO)	N	Mean After IPO (Median)	Kruskal-Wallis Results Rank for Subgroup		
				1998	1997	KW p Value
NWCTAa		127	.2169 (.2355)			
	1998	48	.2074 (.2064)			
	1997	79	.2227 (.2448)	58.94	67.08	.227
LEV1a		127	.3862 (.3764)			
	1998	48	.3915 (.3736)			
	1997	79	.3829 (.3781)	65.46	63.11	.728
LEV2a		127	.0831 (.0445)			
	1998	48	.0882 (.0523)			
	1997	79	.0800 (.0423)	63.90	64.06	.980

*** Indicates significance at the one percent level.
** Indicates significance at the five percent level.
* Indicates significance at the ten percent level.

10.1.5 Summary

Unexpected, firms' post-IPO supplementary and fundamental performance proxies are not significantly different within grouping variables of IPO year, regulated/non-regulated industry, dominant shareholder and sector. But share price returns (Re) for firms that went public in 1997 and 1998 are significantly different from each other. Since firms that went public in 1997 and 1998 do not perform significantly differently in all accounting performance proxies including both supplementary and fundamental accounting performance proxies, it might indicate that stock market may not effectively incorporate firms' accounting performance in share price valuation. Because both post-IPO share price return and accounting performance proxies are available, it is possible to identify the most sensitive accounting performance proxies in determining the share price return.

10.2 Regression Analysis: Post-IPO Market Performance against Post-IPO Accounting Performance

In post-IPO market performance against post-IPO accounting performance regression analysis, post-IPO fundamental accounting performance proxies are pooled together with post-IPO supplementary accounting performance proxies as explanatory variables while share price return (Re) is then employed as a dependent variable. The post-IPO share price return is then regressed against post-IPO accounting performance proxies to identify the determinants in share price valuation.

10.2.1 Dependent & Explanatory Variables

Share price return is defined as the dependent variable, and all post-IPO accounting performance proxies, including fundamental and supplementary performance proxies are employed as explanatory variables, and they are summarised in the table 10.7

Table 10.7 Definition of Explanatory Variables in Regression Analysis of Post-IPO Market Performance against Post-IPO Accounting Performance

This table defines the explanatory variables in regression analysis of market performance against accounting performance. The following explanatory variables are average three years post-IPO performance proxies (denoted as ROSa, ROAa and so on), which are potential indicators of average three years post-IPO market performance of share price return.

Variables	Proxy For	Empirical Definition
Dependent Variable		
Re	Share Price Return	$(R_1+R_2+R_3)/3$
		Post-IPO three years average share price return
Explanatory Variables		
Fundamental Performance Proxies		
ROSa	Return on Sales	Net Income / Sales
ROAa	Return on Assets	Net Income / Total Assets
ROEa	Return on Book Equity	Net Income / Total Book Equity
SATa	Total Assets Turnover	Sales / Total Assets
SALESa	Nominal Sales	Deflated & Standardised Sales
QRa	Quick Ratio	(Current Asset-Inventory) / Current Liabilities
NWCTAa	Net Working Capital/ Total Assets	
		(Current Assets – Current Liabilities) / Total Assets
LEV1a	Total Debt Ratio	Total Debt / Total Assets
LEV2a	Long-term Debt Ratio	Long-term Debt / Long-term Debt + Equity
Supplementary Performance Proxies		
CETAa	Capital Expenditures to Assets	Capital Expenditures / Total Assets
CETSa	Capital Expenditures to Sales	Capital Expenditures / Total Sales
CFMa	Cash Flow Margin	Net Cash Flow / Sales
Grouping Variable		
YR	IPO Year	Category variable with value=1 if firms went public in 1997, value=0 if firms went public in 1998.

10.2.2 Regression Hypotheses

The purpose of the regression analysis is to identify the nature of share valuation by the investors in China. As suggested by Ross et al (1998), the ordinary share is difficult to value because the future cash flows are not known in advance; the ordinary share has no maturity and the life of the investment is essentially forever; and there is no way to easily observe the rate of return that market requires. Therefore discounted cash flow method is not practical. But shares can be valued through estimated dividend payment.

$$P_0 \quad = \quad D_1 / \ (r - g)$$

Where: r = required return in the market on the investment
g = dividend growth rate
D_1 = cash dividend paid at the end of year 1

Since Chinese firms seldom pay dividends, share valuation based on dividends is practically not possible, and investors might tend to look at profitability, efficiency, output, leverage or liquidity performance. As indicated in table 10.2 (pp 202), the mean and median values of PE ratio are as high as 17.61 and 13.66 respectively for all main sample firms, which is an indication that investors might pay large premiums on earnings. Therefore it is likely that investors make their investment decisions on earnings or net profits. Since earnings or net profits merely reflect firms' sales and costs, it is expected that share price return or market performance might be based on firms' real sales.

10.2.3 Regression Model

The explanatory variables are post-IPO accounting performance proxies, and the dependent variable is post-IPO share price return.

$$Re \quad = \quad \beta_0 + \beta_1 \, ROSa + \beta_2 \, ROAa + \beta_3 \, ROEa + \beta_4 \, SATa + \beta_5 \, SALESa \ + \beta_6 \, QRa$$
$$+ \ \beta_7 \, NWCTAa \ + \beta_8 \, LEV1a + \beta_9 \, LEV2a + \beta_{10} \, CETAa + \beta_{11} \, CETSa + \beta_{12} \, CFMa$$
$$+ \ \beta_{13} Grouping \ Variables + \epsilon$$

Where:

- Dependent Variables:

Re = average three years post-IPO share price return;

- Independent Variables:

  Fundamental accounting performance proxies

ROSa   =   average three years post-IPO return on sales;

ROAa   =   average three years post-IPO return on assets;

ROEa   =   average three years post-IPO return on equity;

SATa   =   average three years post-IPO sales to total assets;

SALESa   =   average three years post-IPO sales;

QRa   =   average three years post-IPO quick ratio;

NWCTAa   =   average three years post-IPO net working capital to total
                     assets;

LEV1a   =   average three years post-IPO total debt ratio;

LEV2a   =   average three years post-IPO long-term debt ratio;

  Supplementary accounting performance proxies

CETAa   =   average three years post-IPO capital expenditure to assets;

CETSa   =   average three years post-IPO capital expenditure to sales;

CFMa   =   average three years post-IPO cash flow margin.

ε =   regression error term

As shown in table 10.2, Kruskal-Wallis test results show that firms with different IPO years perform significantly differently in share price return, IPO year is added as grouping variable in the regression model.

YR   =   1, if firms went public in 1997; 0, if firms went public in 1998.

10.2.4 Data Examination

Since explanatory variables are all accounting performance proxies, obviously there are some correlations between the explanatory variables. In the regression analysis, high or nearly perfect correlated explanatory variables are the concern and some of the explanatory variables have to be omitted from regression models to achieve simplicity in model interpretation. The correlation between explanatory variables is shown in following table 10.8.

Table 10.8   Pearson Correlation Matrix of Dependent & Explanatory Variables in Regression Analysis of Post-IPO Market Performance against Post-IPO Accounting Performance

This table presents Pearson correlation matrix of explanatory variables (or accounting performance proxies) in market performance against accounting performance regression analysis. Pearson correlation between any two explanatory variables is presented accordingly. ROSa, ROAa, ROEa, SATa, SALESa, QRa, NWCTAa, LEV1a, LEV2a, CETSa, CETAa and CFMa represent post-IPO performance proxies of return on sales, return on assets, return on equity, sales assets turnover, real sales, quick ratio, net working capital to total assets, total leverage, long-term leverage, capital expenditure to sales, capital expenditure to assets and cash flow margin. Re represents average post-IPO three years share price return.

	Re	ROSa	ROAa	ROEa	SATa	SALESa	QRa	NWCTAa	LEV1a	LEV2a	CETSa	CETAa	CFMa
Re	1												
ROSa	0.154	1											
ROAa	0.143	0.721	1										
ROEa	0.215	**0.897**	0.687	1									
SATa	0.123	-0.098	-0.084	0.104	1								
SALESa	0.215	0.143	0.172	0.244	0.168	1							
QRa	0.122	0.322	0.452	0.212	-0.204	-0.107	1						
NWCTAa	0.302	0.474	0.520	0.554	-0.019	0.053	0.667	1					
LEV1a	-0.057	-0.559	-0.722	-0.437	0.275	0.085	-0.700	-0.585	1				
LEV2a	-0.09	-0.279	-0.166	-0.180	-0.344	0.000	-0.145	-0.157	0.303	1			
CETSa	-0.066	0.264	0.099	0.049	-0.422	-0.045	0.138	-0.129	-0.180	0.163	1		
CETAa	-0.028	0.266	0.295	0.208	-0.257	0.118	0.089	-0.070	-0.268	0.104	0.754	1	
CFMa	0.125	0.303	0.132	0.295	-0.033	0.269	0.039	0.140	0.055	0.043	0.026	-0.108	1

As shown in above table 10.8, the Pearson correlation between post-IPO return on sales (ROSa) and post-IPO return on assets (ROEa) is 0.897 and it is very close to perfect collinearity. Therefore one of them has to be omitted from regression model. Because ROEa has simple correlation of 0.215 with dependent variable of share price return (Re), while ROSa has a simple correlation of only 0.154 with share price return (Re), ROSa is dropped from regression analysis.

10.2.5 Regression Results

$$\text{Re} = 0.013 + 0.125\text{YR} + 0.237\text{ NWCTAa} + 0.051\text{ SALESa} + 0.057\text{ SATa}$$
$$(0.340) \quad (4.412) \quad\quad (2.949) \quad\quad\quad (2.993) \quad\quad (1.848)$$

$R^2 = 0.295$ Observations: 121
Adjusted $R^2 = 0.27$ F = 12.115   Sig. = 0.000

Note: Only significant variables are reported in the equation.   (Equation 10.1)

In developing the model, cases 40, 45, 67, 79, 89 and 123 are outliers and are eliminated in regression model because their presence violates the assumption of constant variance across predicted share price return (Re). These outliers have large standardised residuals of 2.923, 3.209, 3.258, 4.417, 3.049 and 3.864 respectively. The statistics of these outliers are summarised in table 10.9.

Table 10.9 Statistics of Share Price Return (Re) & Outliers in Share Price Return Model

This table summarises the statistics of full sample firms and outliers in share price return (Re) model. The values of mean, median and standard deviation of share price return (Re) of full sample firms are presented. Then the share price returns (Re) of outliers are presented. INDM is the classification of types of core business of the firms defined by Datastream.

Total Sample (127 Cases)	Re		
Mean	0.280		
Median	0.237		
Std. Deviation	0.207		
Outliers (case number)	**Re**	**Sector**	**INDM**
40	0.772	Industrial	Brewers
45	0.794	Miscellaneous	Biotechnology
67	0.834	Miscellaneous	Telecom Wireless
79	0.937	Industrial	Steel
89	0.643	Miscellaneous	House Building
123	0.751	Industrial	Electricity

As shown in table 10.9, the mean and median values of share price return are 28% and 23.7% respectively, while the share price return of the six outliers ranges from 64.3% to 97.7%. Theses six outliers are in six different businesses – brewers, biotechnology, telecom-wireless, steel, house-building and electricity. Three firms are in highly regulated telecom-wireless, steel and electricity businesses and one firm is in the biotechnology business that is highly supported by the government[66]. Therefore the extreme good performance of these firms in share price return might be the result of the signaling effect to the market in that these firms are beneficiaries of the government support.

The scatterplots between model error variance and predicted values of share price return (Re) and between model error variance and explanatory variables reveal that model error variances have been constant at all level of predicted value of share price return (Re). The following is the scatterplots between model error variance and predicted value of share price return (Re).

Figure 10.1 Scatterplots between Model Error Variance and Predicted Value of Share Price Return (Re)

This figure demonstrates that the assumption of homoscadasticity is met since model error variances are constant across predicted values. Cases labeled as 40, 45, 67, 79, 89 and 123 are six omitted cases with large standardised residuals.
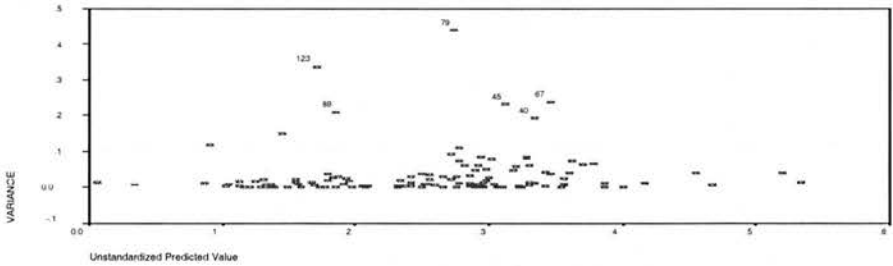
The six omitted cases with large standardised residuals are labelled in the figure 10.1. As the result of omission of these outliers, the model error variances are constant as predicted values of share price return (Re) increase, and the assumption of homoscadasticity is met.

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[66] See analysis in Chapter 11 (222) of Case Studies Analysis.

The model reveals that the share price return is significantly positively associated with liquidity, real sales and sales efficiency but not profitability. As the net working capital to total assets and real sales increase by 1%, share price return increases 0.237% and 0.051% respectively and they are both significant at the 1% level. As sales assets turnover increase by 1%, share price return increases by 0.057% and the significance is at the 10% level. In addition, firms that went public in 1997 are associated with 0.125 higher share price return than firms that went public in 1998 and the significance is at the 1% level.

As expected, the results suggest that investors and stock market emphasise short-term liquidity, sales and sales efficiency in share price valuation instead of profitability measures in terms of return on sales, return on assets and return on equity. Given the fact that quarterly, interim and annual financial reports are widely published and readily accessible by the investors, it is difficult to comprehend why investors simply ignore profitability measures. The possible reason might be that investors are incapable to conduct financial performance analysis by themselves or understand public available information[67].

10.2.6 Comparison of Mean Rank of All Post-IPO Performance Proxies between Firms Went Public in 1997 and in 1998

The regression results also confirm that firms that went public in 1997 generate higher share price return than firms that went public in 1998. As reported in table 10.2 (pp202), the mean (median) share price return for firms that went public in 1997 is 33.40% (32.25%) compared to mean (median) of 19.18% (16.85%) for firms that went public in 1998. Theoretically, if firms that went public in 1997 outperform firms that went public in 1998 in share price return, their accounting return – including those of fundamental and supplementary performance proxies – should be expected to outperform those of the firms that went public in 1998.

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[67] Performance changes regression results summarised in table 9.6 (pp184-185) also suggest that private ownership is significantly positively associated with sales and negatively associated with total borrowing.

As shown in table 10.2 (pp202) and 10.6 (pp210-211), there are no significant differences in all levels of supplementary and fundamental performance proxies for firms that went public in 1997 and 1998. Table 10.10 incorporates both tables 10.2 and 10.6 by comparing mean ranks of fundamental and supplementary performance proxies for firms that went public in 1997 and 1998.

Table 10.10 Comparison of Mean Rank of All Post-IPO Performance Proxies of Firms Went Public in 1997 versus Firms Went Public in 1998

This table presents the summary of mean ranks of all post-IPO performance proxies based on IPO year of 1997 and 1998 respectively, and the significance of such difference in ranks and the winners are with higher ranks. The mean ranks of fundamental performance proxies are originally in Kruskal Wallis test of group difference in fundamental performance proxies for firms went public in 1998 and 1997 in table 10.6. The mean ranks of supplementary performance proxies are originally in Kruskal Wallis test of group difference in supplementary performance proxies for firms went public in 1998 and 1997 in table 10.2. SATa, SALESa and NWCTAa are three significant variables in post-IPO market against accounting performance model and are in bold.

Fundamental Performance Proxies	Mean Rank 1998	Mean Rank 1997	Sig. of Difference	Winner (1998/1997)
ROSa	60.29	66.25	--	1997
ROAa	58.00	67.65	--	1997
ROEa	58.58	67.29	--	1997
SATa	**63.90**	**64.06**	--	**1997**
SALESa	**63.40**	**64.37**	--	**1997**
QRa	61.02	65.81	--	1997
NWCTAa	**58.94**	**67.08**	--	**1997**
LEV1a	65.46	63.11	--	1997
LEV2a	63.90	64.06	--	1998
Supplementary Performance Proxies	Mean Rank 1998	Mean Rank 1997	Sig. of Difference	Winner (1998/1997)
CETSa	66.77	62.32	--	1998
CETAa	67.81	61.68	--	1998
CFMa	70.31	60.61	--	1998

*** Indicates significance of group difference at 1% level.
**   Indicates significance of group difference at 5% level.
*   Indicates significance of group difference at 10% level.
--   Indicates significance of group difference is greater than 10% level.

As summarised in above table 10.10, there are no significant differences between firms that went public in 1997 and 1998 in all post-IPO performance proxies. But firms that went public in 1997 perform slightly better in all fundamental performance proxies, while firms that went public in 1998 perform slightly better in all supplementary performance proxies. If firms went public in 1997 perform significantly better than firms went public in 1998 in share price return, which might suggest that investors in general focus on fundamental performance proxies and ignore supplementary performance proxies in share valuation. In addition, within the fundamental performance proxies, investors focus on real sales, current liability and sales efficiency instead of profitability performance proxies. Therefore it can be assumed that the stock market does not properly reflect firms' real financial and operating performance.

10.3 Summary[68]

The results show that the firms' post-IPO supplementary and fundamental performance proxies are not different within grouping variables of IPO year, regulated/non-regulated industry, dominant shareholder and sector. Share price returns (Re) for firms that went public in 1997 are significantly higher than firms went public in 1998 while their accounting performance is not significantly different from each other at all. The regression analysis of post-IPO share price return against post-IPO accounting performance reveals the determinants in share price valuation. It demonstrates that share price return is highly correlated with liquidity, real sales and sales efficiency, and profitability and other cash-related performance proxies are less relevant in share price valuation. As argued by Vicker and Yarrow (1991), if the efficient markets hypothesis is not true, then the information conveyed by share prices has less value for monitoring purposes.

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[68] No previous privatisation studies have explored the relationship between the firms' market and accounting performance, therefore no comparison can be made here.

Chapter 11   Analysis of 16 Cases – Evidence from 16 Companies:
The Effect of IPO on Constitution, Financing &
Corporate Management

This chapter presents the evidence from 16 firms and intends to provide a better understanding of the effect of IPO on constitutions, financing and corporate management. The effect of IPO on corporate governance is presented in the next chapter.

11.1   Introduction

In June 2001, interview requests were sent out to board chairmen and chief executives of 39 listed firms at the Shanghai Stock Exchange. These 39 listed firms cover various industries and their headquarters are located in Beijing (northern China), Shanghai (eastern China) or Chengdu (south-western China), although some of them may have production sites around China[69]. Within 39 interview requests (13 for each city), a total of 17 firms responded and 7, 4 and 6 interviews were conducted in Shanghai, Beijing and Chengdu respectively. One firm from Chengdu later required that the interview materials should not be used for any purpose, leaving a total of 16 valid cases. It must be specified that it is highly likely that firms with better financial performance, management practice, corporate governance practice or which have just experienced management changes would tend to accept interviews. Given the possible bias in the sample, the interview results may not fully reflect corporate management and corporate governance practice in all listed firms. But as sample firms also feature substantial differences in geographical location, industries and ownership features covering from state-dominated, legal person-dominated, joint-venture to private firms in 13 industries[70], this analysis could well explain the effect of IPO on corporate management and governance to a greater extent. The interview covering letter and semi-structured interview questions are listed in appendix 5.3 (pp295) and appendix 5.4 (pp296).

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[69] As mentioned before, firms in the southern part of China are mainly listed at the Shenzhen Stock Exchange that acts more like a regional market despite its changing features.

[70] See table 5.7 (pp98) for the characteristics of 16 cases.

11.2 The Structure of Analysis

Interview data are grouped and coded based on themes within each topic. Because each firm generally gives similar answers to most of the interview questions, it is more logical to present the evidence based on the interview topics and themes instead of separate case studies of 16 firms interviewed. In addition, during the interviews there was some free discussion with interviewees aimed at achieving extra information that might have been restricted by semi-structured interview questions. Therefore the final themes within each topic in the analysis may well exceed those in the original semi-structured questions listed in appendix 5.4 (pp296). The analysis follows the following three topics:

- The Effect of IPO on Constitutions & Financing

IPO has significant impact on constitutions and financing of former SOEs. After going public, internal corporate governance mechanisms are introduced for the first time for most firms. The newly listed firms now can not only raise financing through equity market but also issue corporate bonds.

- The Effect of IPO on Corporate Management

The firms under study in this thesis are listed publicly held corporations, in which most of them were transformed from SOEs and normally only part of the SOEs is corporatised and then privatised. Generally it is the profitable operating assets and trade liabilities that are carved out into the privatised firms (Chen et al 2000). The original motivation for firms to go public may deviate substantially from those in the developed markets. The purpose of this topic is to understand the effect of IPO on corporate management, which may contribute to their subsequent business failure as listed firms later on. The identified themes are purpose of IPO, main changes after IPO, such as changes in state intervention, changes in financial management, strategic management and human resource management etc.

- The Effect of IPO on Corporate Governance

Corporate governance is the catalyst of a firm's financial performance and sound corporate governance is expected to emerge from the newly listed firms and help to

improve firms' financial performance. The identified themes or the effect of IPO on corporate governance are based on corporate governance mechanisms demonstrated in Chapter 2, including legal device, external mechanisms and internal mechanisms.

The remaining chapter presents detailed analysis of the effect of IPO on constitution, financing and corporate management. The relevant quotations from laws or legislation are in bold format, and the company opinions are in italic format. The author uses self-created short codes to represent each firm interviewed[71].

11.3 The Effect of IPO on Constitutions & Financing

Historically, the governance model of SOEs in China experienced three stages (Schipani et al 2001). The first stage is the traditional model (1950s to 1984), during which the governance structure in SOEs was an integral part of the government governance framework. The second stage is the transitional model (1984-1993), in which a contracting system was introduced and implemented to separate state ownership and SOE management rights. But this model failed to improve SOEs' performance and led to exploitation of state assets due to managerial autonomy and subsequently SOEs Law was introduced in 1988. The third stage is the modern corporate model (1993-present) in which Company Law of People's Republic of China (1993)[72] provides solid legal foundations with the Anglo-American featured corporate governance structures (Tian 1998) to transform SOEs into different business corporations, including closely held and publicly held corporations with detailed requirement of their respective governance structures. It is the third stage where the internal corporate governance mechanisms, such as board of directors and supervisory board are set up from scratch in newly listed firms as a result of IPO. Based on Company Law of 1993, the internal governance structures are summarised in figure 11.1.

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[71] See table 5.7 (pp98) for the characteristics of 16 cases.
[72] It is termed Company Law onwards.

Figure 11.1 Corporate Governance Structure in Chinese Listed Firms

Shareholders

(proxy vote allowed)

Annual General Meeting

appoint, dismissal & remunerate

Board of Directors

appoint, dismissal & remunerate

Chief Executive Officer

Supervisory Board

supervise

supervise

- review & examine finance
- supervision, oversight and correction of directors and mangers
- calling special shareholder meeting
- supervise board meeting

- vote on strategy & business plan
- elect members of the board and supervisory committee
- examine annual report, dividend policy
- mergers, bond issues etc.

- report performance & operation to shareholders
- implement resolutions
- draft business plan & financing plan
- draft dividend policy, merger
- determine internal organisation and management structure

- oversee the operation
- implement board resolution
- appoint & dismiss other senior staff, such as CFO & COO
- other function conferred by the BOD and company charter

Sources: Company Law of The People's Republic of China (1994), adopted at the Fifth Meeting of Standing Committee of the Eighth National People's Congress on 29th December 1993 and effective as of July 1, 1994.

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Figure 11.1 shows that firms' internal corporate governance structure after IPO has incorporated various governance features in developed markets, such as board of directors from the Anglo-American models and supervisory board from the German model. The Company Law reflects the shareholder principle in the Anglo-American model because it requires:

"The board of directors shall be responsible to the shareholders' general meeting[73]...".
Meanwhile, the role of the supervisory board reflects the stakeholder principle in the German model because the Company Law also requires:

"Supervisory board shall be composed of shareholders' representatives and an appropriated proportion of representatives of the staff and workers of the company[74]..."
Importantly, after going public, listed firms are required to pay dividends to the shareholders as a result of equity financing. At the same time, listed firms are also eligible to issue corporate bonds instead of receiving government subsidies as the only financing in the past. Therefore IPO has brought huge impact on constitutional changes in terms of governance structures, as well as the financing methods including both newly introduced equity and bond financing. Given the apparent effect of IPO on constitutions and financing, it is expected that IPO would also have effects on corporate management and governance practice in the newly listed firms.

11.4   The Effect of IPO on Corporate Management

During the interviews, senior executives or directors were asked directly whether IPO was a failure or success in improving firm performance; and then they were further asked to answer the questions based on semi-structured interview questions. In the free discussion, they were encouraged to talk about any issues they thought relevant. Except one steel company, all other 15 firms suggest that IPOs bring serious impacts on the ways they run the businesses. This section further investigates the effect of IPO on corporate management, and the related issues including the purpose of going public, changes in state intervention, changes in financial, strategic and human resource management after IPO are discussed in detail.

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[73] Article 112 of Company Law.
[74] Article 124 of Company Law.

11.4.1 Purpose of Going Public

Going public in China deviates largely from simply raising finance in developed markets. Conceptually, financing relates to investment activities while enterprise reform relates to management style changes. In regard to finance, within the 16 firms, 13 state that financing is the main concern, while 9 firms indicate that enterprise reform is another important purpose and 2 firms stress the firms' market awareness. SOEs were mainly bank-financed and now firms are trying to tap the equity market but with some opportunistic motivations. For instance, as stressed by chief legal adviser of DOFA:

> *Going public is regarded as a means to achieve low-cost capital expansion because it can raise a huge amount of capital without taking responsibility of bank interest.*

On the other hand, going public serves not only as a means of raising finance, but also introducing enterprise reform. In the past, the general manager was responsible for the whole company, but now a modern enterprise management structure with various roles of chief executive officer, chief financial officer and chief operating officer has just been introduced at the time of IPO.

Ten out of 16 firms suggest that there are significant management style changes after IPO, and only four firms suggest that their investment activities have been positive in improving corporate performance. Therefore it seems the objectives of organisational changes and building a new management structure have been met while successful investment activities have not been realised. The starting point for newly listed firms is not promising as modern enterprises because firms did not have sound organisational and management structures to support successful investments by using newly raised capital from the capital market. Given the fact that only 4 out of the 16 firms are positive towards results of their investment activities, disappointing financial performance results presented in early data analysis might be well within expectation.

11.4.2 Changes in State Intervention

State intervention exists in every country to a certain degree and can be useful for providing respect for corporate autonomy, protection of fair competition, guidance of

the micro-economy and fulfilment of business opportunities and other legitimate interests, and the ultimate goal is to improve firm performance and the overall economy. State intervention can be either positive or counterproductive. One new phenomena in state intervention in China is the quota system in initial public offerings (IPO), in which each province is allocated with certain number of firms to go public and these firms should also receive approval from regional government. This system might fit the Chinese context in the early years of economic reform in that the economic development in various regions is highly unbalanced. Without a quota system, the listed firms from vast underdeveloped regions would hardly compete with firms from developed regions to be qualified for IPO. But this quota system also leads to the mismatch in financing and good investments. The CEO of MF pointed out:

> *Many firms with good investment projects cannot find financing; meanwhile firms can go public and raise money from the capital market but do not have good investment projects. In this dilemma, companies having money but without projects is the result of state intervention, not the effective resource allocation through market...*

The Chinese government started to relinquish this quota system in 2001 and allow more promising corporations satisfying the statutory listing requirements to be listed at the stock exchanges.

In terms of other intervention from the government, 3 out of 16 firms state that the state intervenes in business activities and 1 firm states it does so in employment policies. On the other hand, 2 firms confirm that the state also provides preferential policies towards their high-tech and environmental-related projects. Looking closely, the degree of state influence is highly dependent on the nature of the firms in terms of private-owned, state-owned or joint venture. For private firms, the state normally does not intervene but sometimes may prefer private firms to help state firms out. One instance is that Central Bank pressured private MS bank[75] to takeover one regional state bank but central bank's attempt failed due to intervention from the State Council. Despite this incidence, the CEO of MS bank stresses that,

> *As a private bank, the company still has great power to make independent business decisions without any intervention from the government.*

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[75] It was set up by several successful entrepreneurs and is the first private bank listed in China.

For SOEs, state influence has changed from mandatory planning to board representation and the influence has been reduced in business operation. The CEO of DOHA suggests that the state intervention can be understood as two folds,

> *On the one hand, to some extent, (listed) SOEs have not grown up and they always want government subsidises and intervention, but they also complain when the government is involved too much. On the other hand, the state is the largest shareholder and composition of the board of directors purely represents the state.*

The state's intervention also reflects in preventing listed firms from lying off excessive employees, which leads to low labour productivity. The investment director of DOFE points out:

> *...The company does have freedom to recruit new employees, but there is no good solution to those (employees) passed on by the (previous) SOE and they can't be laid off (due to the pressure from the government)...*

But the government also intervenes in a positive way. The CEO of BL stresses that:

> *...Direct state intervention is not obvious but the government provides some preferential policies towards micro-electronic and software industries in which BL is the beneficiary.*

Therefore, the state's influence has been reduced after going public, but the state still intervenes in employment policies, and provides supportive policies towards certain industries.

The following section further examines the effect of IPO on corporate management from three angles: financial management, strategic management and human resource management.

11.4.3 Changes in Financial Management

Going public is a window of opportunity with a large cash injection into the firms and raising capital is important for traditional SOEs with only bank-financing and limited financial management experience. For newly listed firms, the three-fold meaning of financial management is defined in cash flow statement: cash flow from financing activities, cash flow from investment activities and cash flow from operating activities.

In financing activities, all 16 firms suggest that cash raised from IPO are used for various purposes and 8 out of 16 firms admit that they have invested in equity market. As suggested by the board secretary of BS,

> The cash raised from IPO issues is used not only for investment, but also for paying back bank loans, buying government bonds and investing in investment trusts.

Many firms are also trying to issue new shares (rights issues) to increase investment. The Administrative Procedure of Right Issue of Listed Companies (2001) implicitly suggests that the condition for right issues is that a listed firm has been profitable for the consecutive three years after IPO. The Board secretary of CJ points out that,

> If a firm wishes to issue new shares, it has to meet the above requirements. For a poor-performing firm, it has to forge its accounting books ... or entrust its cash raised from the markets to reinvest in the stock markets to make profits...

Therefore in order to qualify for right issues, firms are motivated to speculate in the stock markets to meet the profitability requirements within three consecutive years.

Almost all listed firms carry certain amount of debt from previous SOEs at the time of IPO, and 15 out of 16 firms suggest that they prefer equity financing than bank financing. They indicate that even bank credit is assumed to be cheap, the debt and interest payments are still a fixed obligation. On the contrary, for equity financing, the dividend policy is largely at the discretion of the firms even firms might be under investors' pressure to pay out dividends. If minority shareholders' interests were not well protected, the dividend payment pressure would in effect not exist. In fact all 16 firms suggest that they tend not to pay dividends or just pay a symbolic small amount of dividends. As suggested by Shi et al (2002), the prevalent mindset among SOE managers is that capital raised from the financial markets is free money that can be squandered with impunity.

In operating activities, cash management is a new concept and firms do regard cash flow as a good performance benchmark. Half of the firms suggest that cash flow management in operating activities is mainly short-term focused and the CEO of MF admits that:

... But (cash management is) limited to daily or short-term and there is a gap in long-term management of cash efficiency improvement...

In investment activities, most firms can not pay cash dividends because they are not profitable; or they may be very profitable but would retain the earnings for future investments, given the fact that minority individual shareholders have no say on dividend payments. Only three firms have give small dividends consistently for the last three years. The CEO of DOHA suggests that,

Most listed firms are hungry for investment and they are not willing to give cash back to investors.

The CEO of MF suggests that,

Various financial products should be developed like those in developed markets and more options should be available for free cash flow....

In China, for both firms and individuals, the only available investment instruments are either bank deposit or shares in the stock market. It is identified in chapter 10 that the mean (median) value of post-IPO share price return for main sample firms is 28.02% (23.66%). It is also found in chapter 8 that the mean (median) value of post-IPO return on sales, return on assets and return on equity of main sample firms are 12.87% (14.03%), 5.9% (5.97%) and 5.36% (10.2%) respectively. Therefore firms' share price return deviates substantially from their profitability, which encourage firms to speculate in equity markets[76].

11.4.4 Changes in Strategic Management

All 16 firms indicate that they experience substantial changes in strategic management after going public, and these changes are reflected in the following aspects.

(1) Short-termism

Ten out of 16 firms suggest that their strategic management is short-term oriented. As pointed out by the CEO of MF,

In order to be profitable, the firm is trying to invest in high-risk funds or high-tech investments so as to deliver expected performance.... We have to adjust our investment structures and focus on those could generate short-term return and high growth quickly, combining some real strategic investments...

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[76] The bank interest rate is around 5% to 7% between 1996-2003 (Datastream).

Therefore the firm's investment structures are very fragile and vulnerable to market changes, and the irrational investment behaviour subsequently contributes towards firms' disappointing performance.

Therefore, firms in generally are short-term oriented and there is no strategic planning and management. Meanwhile, the board secretary of DIKA admits that,

> *Senior managers are judged and valued by current profits instead of long-term performance and sound strategies, and they are driven to achieve that on the short-term basis, especially for small firms. We have no written long-term strategic plan and the firm has been managed on a day-by-day basis ...For a small firm, strategy is an abstract concept. We will do something in the future, but now we focus on current targeted performance and finding new product entering into the market...*

Therefore how managerial performance is measured has huge impact on strategic planning. In addition, strategy should not be based on the size of the firm but should be a common practice for all firms whatever their size.

(2) Diversification

Except one bank, one steel firm and one automobile firm in the sample, all other 13 firms are under various diversification programmes. It is not uncommon that the priority of many listed firms is expanding the business and diversification is a widely employed strategy after going public. It is found in chapter 10 that share price valuation is based on three performance proxies of real sales, short-term liquidity and sales efficiency (sales to assets turnover). For newly listed firms, if management wish to meet the expectation of the investors, increasing sales and assets through empire building is highly possible.

On the other hand, because of the de facto non-existence of takeover market, firms have to grow not through acquisition but organic development in which self-development through expanding core business and diversification are the major strategies. The number one issue many listed firms face is whether the business should be diversified or be focused on the core businesses. Organic growth through self-development is time-consuming, while diversification is a much quicker method.

For example, for a retailing firm CDS, it has invested in banks, cable TV networks, hotels etc. in recent years. The board secretary states:

> *...The company has been using trial and error in investment...No matter how many investments have been carried out, there are always failures without a good strategic plan and clear understanding of the investment itself...*

Without good strategic plans, many diversification activities end up as speculative investments.

Furthermore, within diversification, firms tend to employ unrelated diversification without thorough understanding of potential business failure, without sufficient knowledge of the new businesses, without positioning their own competitive advantage or disadvantage and future research and development costs they may need. A good example is CJ, which went public in early 1998 as a trading company with assets in department stores, real estate, shipping and silk production. CJ invested 3 million pounds in a drug company at the end of 1998, and invested in a digital product company in 1999 and invested in nano-technology in 2000. The secretary of the board says that:

> *Actually these three are very fashionable investment sectors. We mainly provide capital to buy technology and we are exploring in these areas...*

Another example is that DAHE switched from failed chemical business to trading and then to IT business in computer hardware and software. The board secretary admits that:

> *...Large economy of scale cannot be achieved easily in IT business... and we are in the situation where we do what we can...*

(3) Parent Company

Many listed firms are bound to other firms by some sort of linkage, either formal or informal. Formal linkages include wholly owned subsidiaries and associated companies in which another company has a minority shareholding. Informal linkages include influence from large shareholders, business connection (either positive in terms of marketing network or negative in terms of transaction) and managerial personnel. If a listed firm's controlling shareholder is its parent SOE, independence between the two can hardly be achieved, and in fact 11 out of 16 firms are bound to

their parent SOEs. Because a listed firm was part of its parent SOE before IPO and all investment proposals were made by the parent SOE at the time when the listed firm was not set up yet. The CEO of TIKE states:

> *...Some companies do business with their parent firms or do business that is an extension of their parent firms. If the investment is new and without any connection with the parent firms, normally it would not be possible...*

A parent firm takes out its high quality assets and employees to form a company and let it go public, therefore this parent firm has listed and non-listed parts with the listed part having better resources. The CEO of TIKE describes the consequence as:

> *... The state-owned parent company will consider its listed part as cash machine and (drain the listed firm) through profit allocation or related transactions.*

Subsequently, listed firms' strategies are strongly influenced by parent firms' strategies and the businesses of the two are mixed together. The Board secretary of CJ indicates:

> *... There is a team in the group (parent) company working for strategies and strategic planning (of us) is based on the strategy of the group as a whole ...*

On the other hand, listed firms deliberately choose to be dependent on parent firms to do business. For example, BRAY is turning its business from electronics to media, but because of the risk associated with the media business, support from the largest shareholder (a state-owned commercial newspaper) is essential. The CEO of BRAY suggests:

> *...Switching business from electronic business to media by itself is very risky for the company without support from the largest shareholder (the parent firm). So projects are either done by the largest shareholder alone, or jointly by the largest shareholder and the listed firm. There is no possibility for the listed firm to do a project by itself and in many cases, the strategies are drawn by both the largest shareholder and the listed firm.*

Therefore the strategic management in the listed firms reflects a serious abuse of minority shareholders' rights by the largest shareholders or parent SOEs of listed firms.

(4) Investment Appraisal Techniques

Investment appraisal is primitive in the sense that many techniques employed in the West are not even heard by management, such as discounted cash flow (DCF) and

payback period etc. None of the 16 firms have ever used investment appraisals mentioned above. Instead, most investments are based on primitive analysis with strong intuition-orientation.

For example, as an agriculture product firm, DOHA spent £6m to import a green house facility from Netherlands for orchid and vegetable production. The original investment decision was based on the estimated market demand from the residence in Shanghai without any detailed financial analysis. But the orchid can be widely planted by peasants in the countryside. It is also uneconomic to grow vegetables in greenhouse in China as agriculture product supply is never in short in Shanghai area. In addition, as transportation improves drastically, fresh products from countryside can reach big cities quicker than before. Subsequently, DOHA's agriculture products and orchid flowers were out of competition and had to be sold at the prices that could never cover the investment costs. The investment was a failure and abandoned in 2000. The CEO of DOHA admits that,

> *We invest in the new products without careful consideration in strategies and investment appraisals...we never heard investment techniques such as DCF etc.*

(5) Research & Development

Except three firms converted from traditional research institutions, private firms and joint ventures respectively, all other 13 firms under study claim they do not conduct research and development by themselves or are considering it. The board secretary of the drug company DIKA suggests that,

> *No firm in the drug industry can do a large research and development project alone. Large projects are done in research institutions, while labs in the companies just provide product improvement and small research development. Cost is one concern, and the other is research direction in that new drug development takes years and sometimes they are not applicable at the time to be introduced.*

In fact the existing R&D by many research institutions are still funded by the state, and there is a tendency that the state may cut research subsidies and even convert research institutions into stock companies. At the end, firms are still facing conducting their own R&D. The chief legal advisor of DOFA (a garment exporting company) admits that,

Due to lack of research in the past, the company still has difficulties in brand building and keeping the consumer base.

The above analysis shows that the fundamental problems in strategic management are short-termism, speculative diversification, lacking feasible strategic planning, lacking investment appraisal techniques and research and development capabilities. Hence managers tend to maximise short-term profitability through unrelated diversification or empire building to meet stock market and investors' expectation.

11.4.5 Changes in Human Resource Management

Human Resource management is a people-centred strategy, but it had been long ignored in the former SOEs. Unlike the universities in the West, Chinese universities do not have strong ties with industries and research can hardly be commercialised. Management degrees were introduced little more than 10 years ago and new graduates can hardly meet the need of a fast growing economy. In addition, the dynamic economic development also requires regulation changes in various aspects and professional groups (accountants, auditors etc.) still need time to evolve. For instance, accounting and auditing professionals have just experienced a painful process in learning newly introduced accounting regulation based on International Accounting Standards, leaving their life-time practice in accountancy less relevant.

Most listed firms were transformed from previous SOEs, and top management in general remains in listed firms and they are traditionally technical-orientated than financial-orientated as the result of the technical-orientated education systems. Within the 16 firms, majority senior managers have a strong technical background, and a financial background within the knowledge structure of senior managers is the weakest point. The COO of BL indicates that:

It is not necessarily that all management teams should have a financial background but some presence would help top level decision-makers in making judgements.

The board secretary of DIKA indicates that after going public the human resource is the major issue for a fast growing firm:

The development speed is so fast and the company lacks human resources to cope with that. We are in the situation of over operation, which directly leads to the decline in efficiency.

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In addition, listed firms need not only people to design strategies but also someone to implement them. The investment director of DOFE admits that,

> *The firm's joint venture failed because the management teams (we sent) failed to co-operate with foreign partners...*

Therefore the quality of decision-making and implementation is shadowed by low quality personnel that are in charge.

11.4.6 Private Sector Development

Proper development of new private sector can stimulate to develop an entrepreneurial culture in China, but Chinese private-owned listed firms do not enjoy the same treatment as SOEs and some business areas are prohibited for private firms to enter. Even the government does not intervene in private firms' daily business operation, private firms are normally been blocked out of the information channel from local governments. Therefore, private firms still suffer discrimination in terms of business freedom and business assistance from the state compared to SOEs. Private listed firms also face the challenge of public mentality. As the CEO of MS Bank suggests:

> *The public are used to ...trusting state-owned banks and they are afraid that private banks would take their money and no one would be responsible if the bank goes bankrupt...*

This is a reflection of culture of social trust. In China, building trust upon strong law enforcement has not been culturally accepted. On the other hand, the CEO of MS also points out that

> *Private firms are not fully trusted not only by the public but also by their own employee. Even with a well-built housing scheme, pension scheme and job training scheme etc., employees still do not feel secure... developing a trust culture and educating employees to be loyal to the company are important factors in corporate success.*

Therefore private-owned list firms are facing more challenges than state-owned listed firms to build trust to maintain their credibility within both the public and their own employees.

11.5   Summary on Corporate Management

Table 11.1 mainly summarises major impact of IPO on corporate management.

Table 11.1 Summary of Analysis of Corporate Management

This table summarises the results of IPO effect on corporate management in areas of operational management, financial management, strategic management, human resource management and private sector development, with each theme presented separately.

State Intervention

- From mandatory planning to board representation
- Control IPO process
- Intervening in employee policies
- Providing supportive policies towards certain industries

Strategic Management

- Short-termism
- No strategy for small firms
- Speculative Diversification
- Close tie with parent firms
- Lacking investment appraisal techniques
- Lacking R&D capability

Private Sector Development

Less help from state comparing with SOEs:
- information channels
- business freedom
- business assistance

Culture
- social trust

Financial Management

Financing activities
- Using IPO funds to payback bank loans
- Controlling bank financing and reducing debt
- Retaining earnings and no cash dividends

Operation activities
- Using part IPO funds to invest in projects
- Emphasising short-term liquidity & cash management

Investment activities
- Reinvesting cash in stock market
- Using IPO funds to buy government bonds

Human Resource Management

- Short of professional managers
- Low quality of employees
- Unbalanced senior management knowledge structure
- Evolution of accounting and auditing professionals

Table 11.1 summarises the key issues related to the corporate management after IPO. It is must be emphasised that there might be some firms that may perform substantially differently in these areas and are exceptional.

The case analysis of the 16 firms suggests that after going public, state influence has been changed from mandatory planning to board representation. Even state does intervene in employment policies; it also provides supportive policies towards certain high-tech industries. In strategic management, short-termism and speculative diversification emerges after IPO. Proper investment appraisal techniques are not employed to make investment decisions. Research and development basically has not been on the listed firms' strategic agenda. In financial management, cash management is based on the short-term. IPO funds have not been properly used for new investments, but to payback loans or reinvest in stock markets. Generally dividends are not paid to investors. In human resource management, the managerial knowledge structure and employee skills could not cope with business development after IPO. For private listed firms, they are normally been blocked out of the information channel from the governments and have less business freedom. In addition, they are still facing the challenges of gaining social trust from the public. Therefore the corporate management after IPO also contributes to firms' poor performance. If good corporate management delivers corporate success, sound corporate governance mechanisms stimulate that process. The effect of IPO on corporate governance in the listed firms is further analysed in the next chapter.

Chapter 12 Analysis of 16 Cases – Evidence from 16 Companies: The Effect of IPO on Corporate Governance

This chapter presents the evidence of the effect of IPO on corporate governance from 16 listed firms so as to identify the key weaknesses in the current corporate governance practices in China.

12.1 Why Corporate Governance Matters

The corporate scandals that emerged in mid-2001 promoted Chinese officials and other state regulatory bodies to put corporate governance at the top of the priorities for 2002. In January 2002 CSRC issued the Code of Corporate Governance of Listed Companies in China. Wolfensohn (2002), the president of the World Bank, points out that the financial crisis in Asia indicates that integration into the global economy without the proper institutions of governance can create vulnerabilities that can partially reverse gains in development and poverty alleviation. Thus good corporate governance institutions are critical for sustainable growth, development and poverty alleviation in a highly interdependent world.

As the economy grows after the accession of WTO, China has to face new external realities. For international investors, the criteria for investment are quality of the firms and quality of the markets. Cha (2001) documents that a recent Mckinsey survey of 200 international institution investors, 80% of those surveyed say that when all other factors are equal, they would be willing to pay a premium for a "well-governed" company; and 75% of those consider corporate governance at least as important as financial indicators. Therefore as suggested by Davies (2002), good corporate governance and effective regulation contribute both to the attractiveness of a country in terms of inward investment and business development, especially for developing countries.

The dramatic collapse of Enron has cast some doubt on the efficiency and effectiveness of corporate governance practices in the US. But Davies (2002) points out that none of the models in the US, UK and Germany etc. is an absolute guarantee

of good and effective corporate governance in all circumstances. They have all experienced problems of one kind or another, and continue to do so. As suggested by Tenev et al (2002), there is no perfect corporate governance model and an effective corporate governance system should be capable of identifying weaknesses before they develop into systemic problems, of learning from failures and of taking prompt corrective actions.

The issues or themes – including legal device, external mechanisms and internal mechanisms – discussed in this chapter are based on the literature survey on corporate governance in Chapter 2.

12.2   Legal Device

Since the establishment of stock exchanges in China in the early 1990s, various laws and regulations have been introduced to guide corporate governance practices, including Company Law, Securities Law and accounting regulations based on International Accounting Standard[1] etc. In 2001, following several corporate governance scandals, a great deal of the CSRC's focus has been on eradicating improper practices prevailing in the market, making 2001 " The Year of Supervision", in which various regulations, derivatives, notices and guidelines are taken by regulators to tackle the weaknesses in corporate governance practices. Apparently, given the weak enforcement and legal systems in China, the positive effect of IPO on corporate governance might not be expected within a short time in that good corporate governance depends heavily upon successful reform of state agencies and legal systems.

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[77] Others important laws and legislations include: Implementation Rules on Information Disclosure for Companies Making Public Share Offerings (1993); Standard Contents and Format of Public Disclosure For Companies Making Public Offerings (1993); Guidelines for Introducing Independent Directors to the Board of Directors of Listed Companies (2001); Administrative Procedure of Right Issue for Listed Companies (2001); Code of Corporate Governance for Listed Companies in China (2002); Administrative Procedure of Information Disclosure of Shareholding of Shareholders for Listed Firms (2002)

12.2.1 General Shareholder Meeting

All 16 firm suggest that that the general shareholder meeting is either simply a rubber stamp for the wishes of controlling shareholders or just a legal procedure. The board secretary of DAHE also indicates large shareholders prefer to solve problems outside the general shareholders' meeting:

> ...*In the case where even large shareholders do have conflicts with each other, they normally would like to solve the problems under the table, not discuss it in the shareholder meeting*...

It is no surprise that the general shareholder meeting does not have real function and it is more or less an opportunity specifically given to small investors who mainly raise their concerns about dividends. Generally, small investors do not want to control the company, but want to see a high return, and they focus on capital gains. The main purpose for small investors attending shareholder meeting is to collect information that may affect share prices. The result is that dividend payout, strategies and long-term investments all become less relevant. Schipani et al (2001) argue that shareholders in the US have a right to bring a derivative action[78] against management while Chinese company law is silent on this issue. But given the weak court system and profound culture differences between the US and China, derivative action may not be a solution to discipline management through confrontational means. Furthermore, individual investors simply do not have either analytic or financial capabilities to analyse every aspect of firms' businesses, or financial or legal means to bring civil suits against firms. It is simply uneconomical for individual investors to monitor the firms and free ride is the ultimate result, regardless of how private investors are empowered by law, like in the US where small investors have profound protection and rights.

Article 108 of Company Law states that

> **A Shareholder may entrust a proxy to attend the shareholders' general meeting on his behalf. The proxy shall present the shareholders' power of attorney to the company and exercise voting rights within the scope of authorisation.**

Article 9 of Code of Corporate Governance (2002) states that,

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[78] Shareholders can bring a class action (to sue) against the directors on behalf of all the shareholders; alternatively they can bring a derivative suit to sue management on behalf of the company.

> **The shareholder can either be present at the shareholders' meeting in person or they may appoint a proxy to vote in their behalf, and both means of voting possess the same legal effect.**

Unfortunately, both Company Law and Code of Corporate Governance provide no practical suggestions for listed firms to make proxy-voting arrangement. Schipani et al (2001) propose that detailed provisions should cover issues such as solicitation of proxies, the validity of voting agreements, and exceptions to the general rule of "one share, one vote" such as non-voting shares, multiple voting shares, interlocking shares, corporate self-owned shares etc.

12.2.2 Major Shareholders

Tenev et al (2002) provide detailed study on the board of directors based on the survey of 257 firms listed at the Shanghai Stock Exchange and they suggest that most important implication of the dominant role of state ownership in China's listed firms is the control the government can exert over management appointments and incentives, and thereby over firms' behaviours.

- **Controlling Shareholders**

Given the fact that state and legal person shareholders hold majority non-tradable shares, acquiring all tradable shares in the market will never lead to the de facto control of the firm and therefore the takeover market is in practice non-existent[79]. This concentrated ownership structure in fact undermines all these regulations and gives the rights to large shareholders to expropriate minority shareholders' interests in listed firms.

In order to isolate the influence of large or controlling shareholders, Chapter 2 of Code of Corporate Governance for Listed Companies in China (2000)[80] specifically defines behaviour rules for controlling shareholders and independence of listed companies. For instance Article 20 states that,

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[79] In fact the so-called merger is also strictly monitored by various level of government and "must be approved by the department authorised by the State Council or by the people's government at the provincial level" (Article 183 of Company Law).

[80] It is termed Corporate Governance Code onwards.

The controlling shareholders are forbidden to appoint senior management personnel by circumventing the shareholders' meetings or the board of directors".

Article 22 emphasises that,

A listed company shall be separated from its controlling shareholders in such aspects as personnel, assets and financial affairs, shall be independent in institution and business, shall practice independent business accounting, and shall independently bear risks and obligations.

Except a private bank and a joint venture, 14 out of 16 firms suggest that their controlling shareholders have very strong influence on them and normally send representatives as board directors or executives to exercise control of listed firms. The CEO of MF indicates:

Our ownership structure is 29%, 27%, 27%, and 2.7% for the top four shareholders. The largest 29% controlling shareholder dominates the rest 71% shareholdings and has 100% control of business...

As mentioned earlier, listed firms were normally part of parent SOEs before IPO. Controlling shareholders are also termed "group" or "parent" by listed firms which used to be spin-offs of previous larger SOEs, and listed and parent firms are often in the same business sector and may compete with each other, or have business transactions and share resources and functions. Therefore this type of interdependence between listed firms and their parent SOEs creates fertile ground for agency problems. The parent SOEs can possibly influence the listed firm in terms of not only directors on boards or executives in charge, but also product and operational management. The board secretary of SAUTO states:

...The group regards the listed firm as an important part, and actually the difference between the two (the group and the listed firm) is just that they have different functions. The group's support to listed firms is also its own success and enlargement...

The board secretary of SAUTO further states:

At the time of going public, SAUTO was a combination of two top-performing firms from the group company ...There are many daughter companies within the group, they are also clear that the growth of the listed firm is also the growth of the group company, as well as bringing more benefits to those daughter companies...

Therefore SAUTO is highly related not only to its parent firm but also to other daughter companies within the group, and its investment strategies are based on the

evaluation of the group as a whole instead of its separate business entity. The tie between the listed firms and the parent SOEs may indicate that selling part of the SOEs may not improve listed firms' financial performance. Because there is no radical management change; listed firms' strategies are integral part of parent firms' strategies; benefits and profits are shared not only by parent firms but also by subsidiaries or daughter companies within the group.

In many cases, the controlling shareholders control both board chairmen and CEOs. The extreme case is DOHA. DOHA's current CEO indicates,

> *After going public, the board chairman, CEO, and CEO of the largest shareholder was the same person, which led to misappropriation of public funds. Till 2000, the firm had total assets of 140 million pounds, in which the largest shareholder borrowed 128 million pounds, leaving 86% of total assets as non-operational assets and 14% as operational assets. The management team was replaced later and assets reconstruction was conducted in 2000.*

As echoed by the board secretary of DAHE:

> *…When the parent firm needs money, the simplest way is to borrow from the listed firm – a cash machine – because of the listed firm's capacity to raise capital from the market.*

The above evidence suggests that the separation between large shareholders and listed firms should also be done in terms of organisational structure, finance, and personnel. The unclear segregation of assets, management and businesses between the listed firms and their parent firms or controlling shareholders are common occurrence, with severe conflict of interest to the detriment of the minority shareholders of the listed firms (Cha 2001). The following is an example of the expropriation by the controlling shareholders listed in appendix 12.1 (pp307).

**Box 12.1 The Expropriation by Controlling Shareholders:
The Case of Sanjiu Pharmaceutical Co.**

CSRC uncovered Sanjiu's troubles in mid-2001. The listed company, which was reportedly China's largest pharmaceutical group, had misappropriated ¥2.5 billion ($302 million) on behalf of a few major shareholders and related business partners without the consent of other shareholders or the public. These diversions amounted to 96 percent of the company's net assets, posing considerable threat to the company's operations. CSRC reprimanded the senior principals, headed by former military serviceman Zhao Xinxian, and fined the company ¥150 million ($18.1million). Major shareholders and related business partners had repaid ¥349 million ($42.2million) to Sanjiu by March 2002. Zhao remains the company's legal representative and the company continues to operate, publishing a quarterly report for the first quarter of 2002.

Therefore, given the presence of controlling shareholders, information disclosure must be transparent so as to protect minority shareholders' interests because listed firms are responsible to all shareholders, not just controlling shareholders.

- **State Ownership**[81]

After firms go public, the local office of the Bureau of State Property Management (BSPM – a central government agency) acts as the largest shareholder of listed firms if central government or its agencies own SOEs. Xu and Wang (1997) argue that a series of principal-agent problems may arise from this institutional setting in the state-controlled listed firms. Firstly, officials of the local BSPM may not have sufficient incentives to preserve and increase the value of state properties since they are civil servants and draw income from the state payroll which has nothing to do with the performance of the listed firm they oversee. Secondly, the BSPM bureaucrats are not industry experts and they have to overlook hundreds of firms in which the state has an interest. In addition to above two concerns, the value of state assets is also difficult to determine. Since share prices in Chinese stock markets are speculative and it is inaccurate to evaluate state assets based on share prices. Therefore there is a consensus in the market that state shareholding should be reduced and private shareholding should be increased so as to improve corporate governance.

- **Legal Person & Foreign Ownership**

The role of legal person shareholders is also problematic. Some legal person shareholders are financial institutions or profit-oriented companies and they desire the privatised firm to maximise efficiency. Since some legal person shareholders are effectively controlled by the central or regional government or SOEs, these legal person shareholders may have objectives that depart from wealth maximisation. The non-tradable nature of legal person shares indicates that legal person shareholders are not motivated to improve firm performance.

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[81] State shares and legal person shares are not tradable at stock exchanges, only public shares hold by individual shareholders and investment funds are tradable.

In addition, a few foreign-invested firms are also listed on the stock exchanges. The experience of MF suggests that foreign shareholders be discouraged from further investment due to the non-tradable nature of legal-person shares. The CEO of MF reveals:

> *In the 1998's right issue, foreign shareholders were concerned about the non-liquidity of legal person shares and therefore refuse to inject more cash into the company. After this right issue, the state became the largest shareholder…In an effort to reduce state shareholdings, the state once again turned out to be the largest shareholder of MF after foreign investors ceased further investment.*

Therefore the counterproductive policy of non-tradable legal person shares should be scrapped if China intend to introduce foreign direct investment into listed firms. In a free market economy, no investors are willing to hold shares without liquidity.

- **Banks & Financial Institutions**

Except for a few private banks, all large banks are state-owned in China. Article 133 of Security Law states that

Banks are prohibited from putting funds in the stock market.

Therefore banks are in effect excluded from corporate governance of newly listed firms. Setting aside banks' role as a potential governance force of listed firms, the state-owned Chinese banks also face their own governance crisis and their portfolio of non-performing loans[82] in many SOEs. Loans made to SOEs in the past were often more political in nature than commercially motivated. On the other hand, if banks now reduce their lending in order to clear their non-performing loan, unemployment and other social consequences will follow. Banks have been functioning as money deposit and lending bodies for decades without experiencing company fundamental analysis or investment appraisals. Banking reform has been equally challenging as corporate governance reform in listed firms.

Financial institutions including securities companies, investment companies and close-end and open-end funds[83] and other investment entities are allowed by

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[82] Non-performing loans are loans that are not being repaid in form of either interests or principal payments.
[83] By February 2001, there were 33 investment funds, and the first open-end funds were allowed in September 2001.

Securities Law to exercise trading in the market place. Article 121 of Securities Law states that:

A minimum registered capital of £50 million is required for financial institutions...

The above requirement may indicate that most securities companies might be either fully or partially state-owned because few individuals could provide such large funds to set up the business. Tenev et al (2002) document that at the end of 1999, of the 30% of tradable shares, individuals held 25% and institutions held 5%[84]. Therefore given their small shareholdings, institutional investors are not motivated to improve firm performance. Short discussions with practitioners and fund managers[85] reveal that most financial institutions hold shares for just over half a year. The financial institutions do not have an interest in long-term investment for two reasons: they cannot exercise influence facing controlling shareholders; and their performance is based on trading profits but not how well they supervise the listed firms.

- **Private Ownership**

Tradable private shares accounts for only one-third of total shares and are held largely by individuals, who have few incentives and resources to perform monitoring function. As argued by Tenev et al (2002), a low free float tends to increase volatility and therefore to reduce the information content of stock prices. One fund manager in Shanghai suggest that Chinese private investors typically hold shares for little more than two months before selling them because they do not find it cost-effective or feasible to monitor managers of listed firms. Generally, private shareholders are simply powerless and they find it not cost-effective to supervise management.

- Power Structures & Insider Control

Between shareholders, board of directors and supervisory board, it is unclear which body prevails in case of conflicts based on current laws and regulations. But article 102 of Company Law states that,

The shareholders' general meeting is the organ of power of a company...

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[84] See table 9.2 (pp174).
[85] The discussion took place in both Shanghai and Chengdu, but the detailed content cannot be used for research upon request from the fund managers involved.

Schipani et al (2001) argue that this institutional arrangement may be reasonable and feasible for closely held corporations with few shareholders. Because it is time consuming, expensive, and inflexible for firms to respond to frequent market changes and other business environments if shareholders are required to meet on every significant managerial decision. Figure 12.1 and 12.2 demonstrate the power balance in the US/UK, German and Chinese corporate governance models respectively.

Figure 12.1 Power Balance in US/UK & German Corporate Governance Models
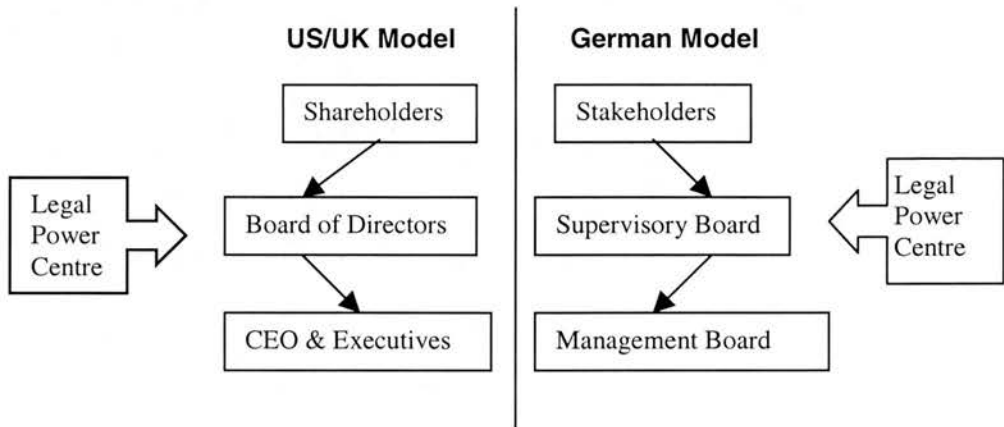
Figure 12.2 shows that the US/UK model empowers the board of directors as the decision-making organ, whereas in the German model, the supervisory board acts as the power centre.

Figure 12.2 Power Balance in Chinese Corporate Governance Model
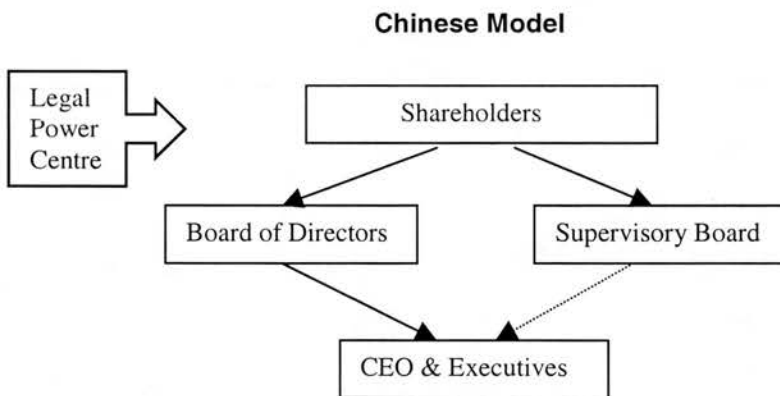
The Chinese corporate governance model is a combination of both Anglo-American and German model. It is very understandable that the Chinese system incorporates supervisory board from the German model in that historically employees (unions)

actively participated in administration and employee interests were protected. In addition, collectivism and consensus seeking has been culturally emphasised. Employee representatives sitting on the supervisory board provide a reflection of stakeholder principle consideration. In fact article 52 to 58 of Code of Corporate Governance also require specialised board committees, such as corporate strategy committee, audit committee, nomination committee, remuneration committee etc., therefore these committees could fully replace shareholder meeting and function as power centre.

In theory, shareholders' meeting is the legal power centre in Chinese listed firms, but the actual power falls either in hands of the board chairman or the CEOs, depending on which position is dominated by the representative from the largest shareholder. Subsequently, because of the de facto control of the largest shareholder, insider control by management has emerged. As revealed by the board secretary of DAHE:

> ...except sector monopoly or highly sensitive industries...under state strict control, all state administrative control does not exist for Chinese firms, but what appears is insider control...in many cases, for regional government, the officials send their trusted followers to the managerial position of the firm, and their followers become the representatives of insiders. They do not represent state interests but the interests of groups of insiders. Their control is fundamentally different from the state administrative intervention...

The key message here is that the state control of SOEs has been decreasing, but at the same time, these listed SOEs are falling in hands of group of insiders who represent either themselves or some party officials in the ruling party within the various levels of government. As suggested by Cha (2001), while the state is the largest shareholder of listed firms, the interest of the state as a shareholder is not always represented. This often results in the listed firms that being controlled by the management, which does not always act in the interests of shareholders. In fact Wu Jinglan[86] and CSRC chairman Zhou Xiaochuan also state that a crucial obstacle to successful corporate

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[86] Jinglian Wu, an economist from China Academy of Social Sciences and chief economist with the State Council's Development Research Centre (DRC).

governance of listed firms is 'insider control' (Shi et al 2002). Therefore Mr Wu has been proposing that listed firms should drop their state shares.

12.2.3 Financial Reporting & Information Disclosure

Sound accounting reporting and auditing is the basis on which financial management is built. Wolfensohn (2002) suggest that within the broad framework of corporate governance, transparency and information disclosures are absolutely central for well-informed investment decisions and the protection of small investors. Transparency and adequate disclosure can not, however, become established business practice without well-trained, competent, and honest accounting professionals. World Bank has been associated with the work done by the National Accounting Institute (NAI)[87] and the Chinese Institute of Certified Public Accountants through the assistance in the Accounting Reform and Development Project.

Tenev et al (2002) suggest that given the stage of development of Chinese capital markets, mature users of financial information, such as institutional investors and analysts are in short supply. As a result, the market is not yet ready to exercise a supervisory function in relation to auditing and accounting professionals and listed enterprises' disclosure practices. Since 1992, various items of legislation based on IAS governing accounting in Chinese firms by the Ministry of Finance are introduced as the results of accounting reform. Specifically, Accounting Regulations for Joint-Stock Companies is restricted to joint-stock companies or listed firms and is further supplemented by the introduction of Detailed Accounting Standards (1997) by the Ministry of Finance, in which cash-flow Statements are for the first time applicable to listed firms and other stock companies.

Company Law and Code of Corporate Governance specifically emphasises the information disclosure and transparency issues of listed firms. But information transparency still has not been solved. For example, some firms forge their financial accounts to reach profitability requirements for right issues, given inefficient external

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[87] NAI was established in 2001, mainly provides high quality training programmes.

supervision from weak accounting and auditing bodies. Chapter X of Company Law states the legal liability for the firm of making false report,

> **...the fine is an amount of not less than five percent but not more than ten percent of the registered capital falsely reported...**

Without mentioning managerial legal responsibility, there is plenty of room for managers to conduct wrongdoings without being punished personally. Only recently officials from ministry of finance suggest that: "Accounting firms and their accountants who are found providing false financial figures will be severely punished" (China Daily 2001).

Information disclosure of executives and directors' pay is a sensitive issue in published financial report, and generally not transparent at all. Since 1998 CSRC has required publication of compensation of senior management, but details of managerial compensation may not be truly published in most listed firms' financial reports. Fifteen out of 16 firms did not answer the question of the actual compensation figures directly during the interviews. The board secretary of CJ admits:

> *...The information revealed about annual salaries of senior management does not reflect the truth, and the difference can be very large. In order to avoid income tax, every company shows the same facts... some firms just publish the total amount and total numbers of senior members without specification for individuals.*

Financial institutions, accounting and auditing firms in China do not have their independence since they are subsidiaries of state agencies not equivalent of their counterparts in developed markets. For instance, some government departments use their power to influence the work of professional service companies, which is against the principles of fairness and objectiveness. Some government departments also set up professional service companies to use their administrative power to pursue economic benefits (China Daily 2001). In addition, these newly established financial service firms tend to lower their standards to meet customers' needs to compete for

businesses[88]. Therefore the professionalism of these bodies is challenged in a weak legal enforcement environment. The board secretary of DOHA suggests that:

> *... If professionals cannot find problems, who else can? The credibility of a Hong Kong auditing firm is much higher than a local accounting firm in Shanghai and (it is acceptable) even if it charges much higher fees and imposes more strict rules...*

In recent years, some serious steps have been taken by Chinese government to improve information transparency. In 2001, the Chinese Ministry of Finance has revoked the license of Zhongtianqin, a leading accounting firm in Shenzhen City for negligence during the Guangxia Stock market fraud. The accounting firm was punished for failing to detect the serious financial problems of the Guangxia Industrial Co., a firm based in Northwest China's Yinchuan City and listed at the Shenzhen Stock Exchange, during its auditing process. Appendix 12.1 (pp306-307) illustrates some high-profile scandals of Chinese listed firms in 2001, including above-mentioned Guangxia Industrial Co. and Sanjiu Pharmaceutical Co. etc. The lack of profitability of listed firms and these corruption scandals have created an untrustworthy setting for long-term investors.

The CSRC believes that the basic principle of corporate governance is to protect shareholders' rights. Various measures have been taken by CSRC to improve information disclosures, including annual reports, interim reports and quarterly reports (from January 2003) and other respective laws and regulations. The quality of accounting and auditing firm should be improved based on international standards and enforcement mechanisms should work when problems emerge.

12.3   External Mechanisms

12.3.1 Takeover & Bankruptcy

The market liquidity of shares is important for market efficiency, but merger and takeover of listed firms is strictly controlled in China. Article 183 of Company Law states that,

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[88] In 1999 about 100 large accounting firms were competing to provide services for some 1,000 listed firms (Tenev et al 2002).

> **The merger of division of a joint stock limited company must be approved by the department authorised by the State Council or by the people's government at the provincial level.**

Article 78 of Securities Law states that,

> **A listed company may be purchased by offer or by agreement.**

The above two rules are in fact contradictory if listed firms should obey both Company Law and Securities Law. Article 81 of Securities Law states that a investor who possesses 30% of the shares issued by the listed firm can make a purchase offer to other shareholders and the following Article 86 further states that:

> **"By the time the term of a purchasing order has expired and the number of a purchased company's stock held by purchaser is more than 75% of the total amount of stocks issued by the company, the listed company shall stop listing its stocks in the stock exchanges."**

As reported in table 9.2 (pp174), the mean (median) values of state ownership and legal person ownership are 43.6% (54.3%) and 21.7%(12.2%) respectively, therefore mean (median) value of non-tradable shares is 65.3% (66.5%) in total, leaving around 35% private shares traded in the market. Hence mergers and acquisitions in the free market are practically not possible given the presence of majority non-tradable shares. Tenev et al (2002) argue that corporate control mechanisms and shareholder activism can do little to alleviate agency problems under the existing state-dominated ownership structure. In fact the high degree of ownership concentration and the nontradibility of more than two-thirds of the shares imply a low contestability of control. In practice, the so-called merger can be achieved through "agreement" between state and legal person shareholders under the admission and supervision of State Council and stock exchanges. What makes takeover more difficult is that in fact no one prefers the listed firm to be delisted, whether state, legal person or management. Despite their different motivations, they may collude to make takeover practically impossible.

As regards bankruptcy, Article 189 to 198 of Company Law states conditions and procedures for bankruptcy, dissolution and liquidation of companies, but firms are unlikely forced by banks to repay loans, which is the cause of non-performing loans of state banks in the first place. If firms do go bankrupt, as argued by Lew (1997),

bankruptcy often represents a convenient way of handing over debts which then fall to the responsibility of the banks and the state. In addition, the leverage situation of listed firms has been improved after IPO, and the bankruptcy pressure is further reduced subsequently. As reported in table 8.1 (pp137), both total debt and long term debt ratios drop dramatically after IPO, from mean (median) values of total debt and long-term debt of 58.05% (61.15%) and 20.1% (16.24%) respectively before IPO, to the mean (median) values of those respective leverage ratios of 38.62% (37.64%) and 8.31% (4.45%) after IPO. In short, the absence of takeover market and bankruptcy pressure shows the green light to large shareholders or insiders to expropriate minority shareholders.

12.3.2 Financial Market

Tenev et al (2002) suggest that the lack of a strong institutional investor base in China is related to the lack of professional stock market analysts whose interactions with listed firms and market coverage are often superficial. Interview data reveals that all 16 firms hold a very negative attitude towards financial institutions[89] and indicate they have no trust in them because many financial institutions mainly focus on capital gains and share trading.

The board secretary of DIKA explains:

> *They (financial analysts) have nothing to do with us. For a listed firm, the share price fluctuation in the secondary market does not have direct connection with company performance...*

The board secretary of BS suggests that,

> *Financial analysts lack knowledge of the financial market and do not actually have interests in company fundamentals, especially when they have less power to manipulate share prices of some large firms.*

The CEO of DOFE also criticises the inside trading of some securities companies:

> *Publicly revealed information is not fully true, therefore there is plenty room for those who can get inside information such as financial analysts to play with. Securities companies may make a deal with listed firms to get insider information for trading purposes... we are trying not to get in touch with them to avoid insider trading...*

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[89] Including financial institutions such as investment funds and investment companies under securities companies registered to CSRC to trade at stock exchanges.

On the other hand, both financial institutions and private investors also regard large firms with monopoly power (such as BS – a steel company) as safe investments. The board secretary of BS indicates:

> *…When a company does not perform well, it does not mean that its market (share price) performance will equally be pushed down…this is reputation effect. Share price might not reflect the firm's true performance.*

Meanwhile, the supervision from regulatory bodies is not tough in the sense that insider trading is not investigated and prosecuted seriously. For instance, Article 177 states that,

> **Issuers of securities providing false or misleading information are to pay a fine of more than £30,000[90] but less than £60,000 and persons in charge directly responsible for the case are to pay a fine of more than £3,000 but less than £30,000.**

As shown in table 9.2 (pp174), mean and median values of share issue size of sample firms are £34.5 million and £26 million respectively. Merely a 1% fine of £34.5 million of share issue size is almost nothing for a securities company with £50 million minimum capital[91], and the fine on individuals in fact is too small to have any significant effect in correcting behaviours of other practitioners.

As regards insider trading by financial institutions, Article 183 of Securities Law states that,

> **"…Their illegal earnings are to be confiscated, and they are to be fined an amount between one and five times their illegal earnings or an amount not more than the value of the said securities of the illegal transaction. Those involved in crimes are to be investigated for their criminal liability according to the law. Workers for securities regulatory bodies who engage in insider trading are to be given heavy punishment."**

Even if securities companies are fined for an amount of five times the illegal transaction, it is still meaningless given their large capital. The law provides no practical solutions to punish the individuals involved. Therefore the trust from listed

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[90] For the simplicity of illustration, the exchange rate between British Stirling and Chinese Yuan is taken as 1:10 instead of approximate rate of 1:13 in August 2003.

[91] According to Article 121of Securities Law, the minimum registered capital to set up a securities company is £50 million.

firm towards financial market is very low, the board secretary of SAUTO suggests that:

> *...We do not take their analysis seriously. We are the manufacturers and we do not care what they say about us, it is meaningless...and we just focus on fundamentals...*

Therefore it is not uncommon that the securities companies and fund management keep manipulating share prices. In 2001, it was the first time for the government to reveal details of a low-profile probe into the fund industry and the investigation found evidence of abnormal trading in eight of the ten fund management firms.

Box 12.2 Price Manipulation: The Case of Boshi Fund Management

The CSRC probe was investigated after a report on corruption in the fund management industry was published by Caijing magazine, which has a reputation for aggressive financial report.

Only two of the country's top 10 fund management companies were found by the CSRC to have been free of involvement in price manipulation. The fund managers had typically bought and sold the same shares on their own account, inflating the trading volume and driving up the price by luring other investors into the stock markets.

Thirty executives at China's top fund management companies have been sacked or disciplined following an investigation by the country's stock market regulator into share price manipulation. The China Securities Regulatory Commission said it was also considering legal charges against executives in one firm, Boshi Fund Management. The CSRC had uncovered more than 10,000 "abnormal trades" in Boshi's records.

Sources: McGregor, Richard (2001), The Financial Times, 26th March 2001.

New regulations have been ruled out to regulate the market continuously by CSRC, but the chief legal advisor of DOFA suggests:

> *Most regulations do not coincide with each other and generally lack detailed practical solutions for implementation...without them, behaviours in the market place could not be well disciplined...*

Therefore the legal obligations and responsibilities of wrongdoings such as price manipulation and inside trading must be prosecuted. Given China's social and political system, in which juridical, legislative and administrative functions are not separated as they are in western countries, law enforcement is always challenging.

12.3.3 Managerial Market

Some of the so-called managers of the listed firms are still politically appointed and many of them do not have sufficient managerial skills and capabilities in running a business in a free market economy. The CEO of BRAY indicates that,

> *Many majority state-owned listed firms still use official appointment, and private firms tend to recruit family members, but there is a tendency to recruit professional managers from outside.*

If managers are still appointed by government or its agencies, generally they will be replaced only when they have done something wrong, as suggested by the board secretary of CDS:

> *… The management teams are quite stable. Senior management members have a high sense of self-protection and they believe (that it is better in) doing less than making more mistakes.*

The dilemma is that there are no sufficient well-trained professional managers available to serve listed firms. The CEO of MF gives one example:

> *…An online advertisement for positions of technicians attracted 400 applicants while for position of technical director and sales director attracted only 20 applicants…*

Subsequently, there are almost no market evaluation mechanisms for professional managers. The CEO of DOHA suggests that,

> *Lack of market evaluation mechanism also reciprocally hinders the growth of managerial class.*

Increasing cash flow or ownership right of managers in terms of stock option[92] is a major incentive instrument that it is assumed to lead to firms' performance improvement in developed markets. But if managers are incapable of running business, incentive has little relevance. Therefore a stock-option like mechanism may not be applicable in China because the managerial market still needs time to develop and experienced managers need time to grow to a large extent.

12.4 Internal Mechanisms

Fama and Jensen (1983) argue that the essential part of internal mechanisms is the

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[92] The incentive scheme is further discussed in later section of Internal Mechanisms.

separation of decision control and decision management in which an agent can not exercise exclusive management and control over the same decisions. In China, managers in general do not hold large shareholdings in the firms they serve and without effective control procedures, decision managers are more likely to take actions that deviate substantially from the interests of the shareholders, especially weak minority shareholders.

12.4.1 Board of Directors & Independent Directors

The board of directors is the critical link between ownership and corporate governance. Davies (2002) suggests that one lesson of corporate collapses in the US and in Europe seems to be that no corporate structure can guarantee success if the individuals within it do not operate with the right degree of independence, with the right kind of expertise and do not devote the required amount of time to the important role of non-executive director.

Article 112 of Company Law states that,

> **A joint stock limited company shall have a board of directors composed of five to nineteen members.**

The board of directors' responsibilities and power are further defined in figure 11.1 (pp225). As shown in table 9.2 (pp174), the board size in terms of mean and median values of board numbers are both 11. The board of directors has the power to engage or dismiss the managers. In 1998, CSRC requires that the board chairman and CEO should be separated, but in reality the power centres either on the chairman or the CEO, depending on who is appointed by the largest shareholder.

- Nomination & Composition

For all 16 firms, shareholder directors account for the largest portion of board of directors and the CEO normally sits on the board as executive director and there are one or two independent directors on the board. In general, controlling shareholders control the board of directors. As indicated by the CEO of MF:

> *…Whether absolute controlling shareholders or relative controlling shareholders, whoever has the largest shareholding will control the firm… and would consequently send more board directors…*

Meanwhile, as revealed by the board secretary of CDS:

> *Large shareholders nominate executives and some executives also hold positions as*
> *directors, which in effect leads to directors and executives being the same team...*

Therefore Chinese board composition reflects the typical insider boards compared with boards in the US and UK where independent directors play a larger role.

The board secretary of CJ suggests that:

> *... Most firms emphasise the social reputation of independent directors and many academics*
> *from universities or research institutions with good technical background are invited to sit*
> *on boards. But some of them have no idea about finance, law etc. How can they make good*
> *judgements? Having independent director becomes an on-the-surface need....*

The board secretary of SAUTO indicates the urgency to have directors with financial and other backgrounds on the board:

> *...We have invited independent directors...and the next step is to have someone who knows*
> *more about finance, law etc...*

Section 1 of Guidelines for Introducing Independent Directors to the Board of Directors of Listed Companies (2001) requires that

> **At least one of the independent directors should be an accounting professional.**

This requirement is highly questionable. Traditionally accountants in China play less managerial roles and mainly conduct a bookkeeping function. Therefore it is not known how many available accounting professionals with managerial skill can sit on boards, not mentioning the impact of the new accounting rules based on International Accounting Standards on accounting practitioners.

- Independent Directors

Section 1 of Guidelines for Introducing Independent Directors to the Board of Directors of Listed Companies (2001) requires that,

> **"By June 30th 2002, at least two members of the board of directors shall be independent**
> **directors; and by June 30th 2003, at least one third of board shall be independent**
> **directors".**

According to online data published by Shanghai Stock Exchange, most firms had introduced one to two independent directors by the end of 2001.

Section 5 of Guidelines for Introducing Independent Directors to the Board of Directors of Listed Companies requires that,

> **The role of the independent director in listed companies should be adequately activated...with power to appoint the outside auditing or consulting organisation independently...**

In fact there is no specific description in either the Code of Corporate Governance or Company Law regarding voting power of independent directors.

On the other hand, the CEO of DOFE illustrates one simple calculation to support his view that independent directors may collude with managers:

> *If a public figure were invited to be an independent director for 5 companies[93], his annual pay would end up £50,000 in total. If his tenure were three years then the total compensation would be £150,000 which is an impossible income for a normal employee in China...therefore if his benefits were guaranteed, he would feel happy if the company is just so-so (on the condition that) there was no serious illegal action involved to risk his reputation.*

Therefore the actual compensation given to independent directors leads to financial dependence of so-called independent directors and they may try to secure their positions by giving up supervising managers.

Therefore, independent directors normally fall into two groups: they either cannot be independent in terms of independent opinions or can be independent with high social status but without expertise in managing or supervising firms. As suggested by Forker (1992), raising expectations about the monitoring role of non-executive directors is likely to impose pressure on non-executive (or independent) directors who may lack the time or resources or independence to fulfil this function. Since 2001, CSRC has been deliberately providing training for independent directors to improve their performance and it is not known the effectiveness of such policy.

- Accountability

The legislation is silent with respect to the accountability of directors and executives,

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[93] Section 1 of Guidelines for Introducing Independent Directors to the Board of Directors of Listed Companies states that "independent directors can only hold concurrently the position of independent directors in five listed companies at maximum".

in which the legal obligations and responsibilities of wrongdoings of senior executives and director executives are not specifically quantified or described[94]. As suggested by Shi et al (2002), misconduct does not prevent those responsible managers from being appointed or reallocated by state agencies to serve in other firms. Shi et al (2002) also argue that in China, enforcement emphasises administrative and criminal processes rather than derivative civil actions. The CEO of DOHA points out the difficulty in implementing civil compensation to investors:

> *... The persons are guilty of wrongdoings should take their responsibilities for legal and civil compensation. But directors and executives only have basic incomes from current jobs and they have no capital for large compensation...*

In addition, the regulations mainly stress profitability as the main reason for delisting. Tenev et al (2000) suggest that a broader list of factors used by international exchanges may be included, such as the failure to observe good accounting practices and the creation and perpetuation of conflicts of interests.

- **Board Committees**

It is found that all 16 firms hold average 4 board meetings per year, therefore the effectiveness of the board of directors is in question. As the board secretary of CDS indicates:

> *Board members do not have clear division of work, ...and there is no clear requirement from company law...*

Therefore board committees are essential to ensure that the board functions properly. The setting of committees was introduced by the Code of Corporate Governance in early 2001, and article 52 of the Code of Corporate Governance specifies that:

> **The corporate strategy committee, audit committee, nomination committee, remuneration and appraisal committee and other special committees that should be set up in accordance with the resolutions of the shareholders' meetings... The audit committee, the nomination committee and the remuneration and appraisal committee should be chaired by an independent director and independent directors shall constitute the majority of the committees.**

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[94] Only Chapter XI of Securities Law states legal liabilities of security companies in share underwriting and other transactions with detailed financial punishment description.

The effectiveness of board committees is not known because whether they can function meaningfully or not is largely dependent on the presence of the truly independent directors. The performance of committees cannot be tested in this study.

- ### Board Room Dynamics

The boardroom culture partially reflects the Chinese culture in seeking harmony through balancing and sharing power. It is widely felt in boardrooms of 16 firms that business should be conducted as far as possible through a smooth problem-solving process instead of confrontation and fragmentation. The board secretary of CJ describes how a board meeting is conducted:

> ...Board meetings are friendly and members (directors) are from the same family... large shareholders are trying to keep on good terms with each other...

The board secretary of BS also suggests that because of low efficiency of the board of directors:

> Board directors have to communicate with all board members, which leads to complicated individual relationships of people involved with each other...

Directors of supervisory boards generally attend board meetings, but potential conflicts between board of directors and the supervisory board are not welcomed. The board secretary of SAUTO believes that:

> If the supervisory board stood opposite to board of directors, there would be no hope for the company...

A dynamic boardroom culture normally requires greater will, skill and power backed by legal means for both independent directors and supervisory boards. The chief legal adviser of DOFA admits that:

> We introduced independent directors long before the requirement from CSRC, but till now there has been no opposite opinion against other (non-independent) board members... and there should be more debates in board meetings...

- ### Chairman & CEO

The functions and power of the board of directors and CEO are summarised in figure 11.1 (pp225). Article 119 of Company Law also states that,

> **A joint stock limited company shall have a manager (CEO), who shall be engaged or dismissed by the board of directors.**

Fifteen out of 16 firms have separate chairmen and CEOs. There is no specific regulation covering the nomination process of Chairman and CEO in Company Law. Because the voting right is based on one share one vote, therefore eventually large shareholders decide the ultimate nomination of both CEO and Chairman. For firms that went public in the early years (since 1991), CEO and Chairman were always the same person, but this phenomenon changed since 1998. Fung et al (2001) document that approximately 32% of board chairmen hold the position of chief executive officers in 1998, while this ratio reduces to 22% in 1999 and 16% in 2000[95]. Online data from Shanghai Stock Exchange shows that the majority of firms had already separated the role of chairman and CEO at the end of 2001. Forker (1992) suggests that one aspect of corporate governance that has given rise to concern is the dominant personality phenomenon, such as the dominance of CEOs in US firms, which is found to be associated with poor disclosure and an apparent lack of interest in monitoring. In the Chinese context, the dominant personality can be either the chairman or the CEO, depending on who is appointed by the largest shareholder.

- Performance Evaluation & Incentive Schemes

Chen et al (2000) suggests that one characteristic of listed firms in China is that top management often has little or no share ownership. All 16 firms have been working on combining incentive and restraint schemes in terms of either stock option or other performance related pay schemes. Generally, as pointed out by the board secretary of CDS:

> We lack a scientific performance evaluation system and the proper performance benchmark...

The CEO of BL suggests that,

> The company in fact has been using a simulated stock option plan to implement incentives, and real stock option is not on the agenda due to government policies and legal barriers.

In a few cases, firms might use more sophisticated evaluation schemes. For instance, the management of MS bank may have never heard Economic Value Added (EVA), but in practice cost and risk are incorporated into the performance evaluation.

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[95] The reduction in the percentage of the dual roles is the result of an administrative instruction made by CSRC in 1998 requiring firms to separate the roles of chairman and CEO.

Fung et al (2001) argue that the lack of executive stock options in China is a missing ingredient in the design of incentive systems that align the interests of managers and investors. But their claim that directors and executive are underpaid is based on executive compensation standards in the developed markets and is obviously questionable in the Chinese context. Unlike the listed firms in the West, listed firms in China still have large state residual shareholdings. Granting stock options to management may be counterproductive in that the stock option may enhance management control of the listed firms. Therefore, stock option-like incentive schemes can be possibility introduced when the state residual shareholdings have been reduced significantly and when a few large minority shareholders can better supervise such practice. At the current stage, performance-related pay such as bonus scheme is probably more practical.

Calian (2002) suggests that it is important for the remuneration committee to be made up of independent directors who can calculate the potential salary of an executive since shareholders do not have the resources, and there has to be a clear link between pay and performance. But the research on Chinese listed firms by Stern & Stewart reveals that listed firms' market value and company fundamentals deviate from each other severally (Hua 2001), which suggests that incentive schemes such as stock options cannot align management with shareholders' interests. This finding is consistent with the findings from the earlier financial data analysis in Chapter 10. As shown in table 10.2 (pp202), the three years post-IPO mean (median) value of share price return of listed sample firms is 28.02% (23.66%), while as shown in table 8.1 (pp137), return on sales, return on assets and return on equity are 12.87% (14.03%), 5.91% (5.97%) and 5.36% (10.2%) respectively. Therefore the stock-option like incentive scheme is premature in China given its inefficient equity markets and listed firms need to find new incentive schemes to align management with shareholders' interests.

12.4.2 The Role of Supervisory Board

The function of the supervisory board is summarised in figure 11.1 (pp225). Regarding the role of the supervisory board, the Company Law and Code of

Corporate Governance only use **"shall"** to describe its rights without quantifying its power or relationship towards the board of directors and executives it is supposed to supervise. Article 54 of Company Law states that,

> **...the supervisory board shall supervise both board of directors and managers (executives)...(and) shall attend meetings of the board of directors as non-voting participants.**

Article 127 of Company Law suggests that,

> **The articles of association of the company shall stipulate the method of deliberation and voting procedures of the supervisory board.**

Therefore, in practice, no procedures have been developed to empower the supervisory board toward the board of directors and it is generally sidelined and just a token.

- Composition

Article 124 of Company Law states that:

> **"The supervisory board shall be composed of shareholders' representatives and an appropriate proportion of representatives of the staff and workers of the company ..."**

In practice the supervisory board is elected by large shareholders through board of directors and its members come from senior management, shareholders and employee representatives. Tenev et al (2002) also find that leaders of party committees tend to assume the positions of chair and vice chair in almost all listed firms, and they suggest that the lower quality and less professional experience of supervisors compared with directors and managers has led to supervisors' inability to actually supervise directors and managers.

- Independence

All 16 firms suggest that the independence of supervisory board is difficult to achieve. The board secretary of BS indicates that,

> *The board of directors is equipped with the best expertise while the supervisory board is relatively weak in this aspect. If the board of directors cannot find where the problems lie, neither can the supervisory board. In addition, the deliberate misconduct of the board of director may also involve the supervisory board that attend the board meeting and nominated by the board of directors...*

Echoed by the board secretary of DAHE:

> *...Shareholder representatives, employee representatives and senior management*
> *representatives do not play their roles. Since the board of directors nominates the*
> *supervisory board directors, it is not possible for the supervision board members to supervise*
> *the board of directors who nominated them in the first place.*

In regard to employee involvement in supervisory board, the CEO of DOFE indicates that,

> *All supervisory board members are from employees in the company (including executives),*
> *and in theory it is not possible for an employee to track the responsibility of a senior*
> *manager because the manager may fire him first...*

The idea of supervisory board is borrowed from the German corporate governance model and culturally supervisor board indeed reflects the stakeholder principle in China where collectivism prevails. But since years of economic reform, trade unions in fact have been further weakened in dynamic economic transition. Subsequently, it cannot be expected that employee representatives sitting on board would exercise supervision of management as those do in Germany. As suggested by Cha (2001), this system of supervision is not effective since it is often unclear whose interest is represented by the supervisory board. In many cases, the supervisory board duplicates the authority of the board itself but without corresponding responsibilities. The presence of supervisory board may give the illusion of certain checks and balance in the listed firms when none existed.

12.4.3 Financing

In the past, SOEs were mainly financed by bank loans and banks generally acted as creditors to collect interest with minimum monitoring function. Table 8.1 (pp137) shows that listed firms' leverage declined dramatically after they went public, and mean (median) values of total debt and long-term debt ratios drop from 58.05% (61.15%) and 20.1% (16.24%) to 38.62% (37.64%) and 8.31% (4.45%) respectively after IPO. The CEO of MS suggests that,

> *On the one hand, state banks are trying to get rid of non-performing loan and therefore long-*
> *term lending has been reducing in recent years. On the other hand, firms are simply*
> *unwilling to borrow from banks so as to have less pressure to meet interest obligations.*

Even bank loans do offer tax advantage, 10 out of 16 firms still suggest that they prefer not to borrow from the banks.

After going public, firms are also allowed to issue corporate bonds, and article 164 of Company Law states that,

> **The scale of the company bond issues shall be determined by the State Council.... The issue of company bonds is examined and approved by the (relevant) departments determined by the State Council.**

Article 172 of Company Law also states that,

> **...a listed company may issue company bonds which can be converted into shares...The issue of company (bonds) convertible into shares shall be subjected to the approval of the department of securities administration under the State Council...**

Since listed firms are converted from SOEs, the government has great interest in their viability and bond issuing has been strictly controlled. Given the disadvantage of debt financing in terms of interest payments and the practical difficulties in issuing corporate bonds, firms tend not to issue corporate bonds, leaving debt financing as a governance mechanism (in terms of bankruptcy pressure) more difficult.

As mentioned earlier, issuing new shares for external financing is a time-consuming practice because of regulations and the long approval process, all 16 firms indicate that internal financing from retained earning is much easier and as important as external financing from issuing new shares. Comparing internal financing from retained earnings and external financing from issuing new shares, external financing may impose capital market monitoring and costs of other uncertainties while retained earning is simply free cash from investors. Therefore firms tend to keep large retained earnings and pay no dividends to investors[96]. As suggested by Jensen (1986), corporate managers are the agents of shareholders, a relationship fraught with conflicting interests; and payouts to shareholders reduce the resources under managers' control, thereby reducing managers' power and making no dividend payout more likely when the firm must obtain new capital.

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[96] But the share price does not necessarily go down. Due to the speculative stock market, private and institutional investors are keen on capital gains instead of dividends.

12.5 Summary on Corporate Governance

The above analysis shows major governance problems in three key aspects – legal device, external mechanisms and internal mechanisms. Table 12.2 summarises the main findings of the effect of IPO on corporate governance.

The analysis suggests that IPO brings corporate governance concept and mechanisms into listed firms. The weaknesses in corporate governance practice are reflected in almost every aspect of legal device, external and internal mechanisms. In legal device, the general shareholders meeting is just a rubber stamp of large controlling shareholders that dominate listed firms in finance, strategy, personnel and operation. The power structure of a listed firm as defined by law in effect leads to insider control by controlling shareholders. Large non-tradable shares held by state and legal persons in effect prevent the existence of a takeover market. Information disclosure is not transparent and corporate governance scandals hurt investors' confidence severely. Essentially, minority shareholders' interests are not well protected. In external mechanisms, the absence of a takeover market, managerial market and bankruptcy pressure leads to a speculative equity market. Various laws and regulations have been introduced to improve market transparency and to prevent insider trading and price manipulation, but enforcement mechanisms are not in place to force those accountable to take legal obligations and responsibilities of their wrongdoings. In internal mechanisms, the board of directors is in effect an insider board with powerless so-called independent directors. The accountability of senior executives is not well emphasised by law. Independent directors and directors supervisory board are sidelined with neither power nor independence. Given current corporate governance practices in Chinese listed firms, the superior financial performance can not be expected.

Table 12.1 Summary of Analysis of Corporate Governance

This table summarises the results of IPO effect on corporate governance in terms of legal device, external mechanisms and internal mechanisms, as well as corporate governance development in private sector, with each theme presented separately.

Legal Device

1. General Shareholders' Meeting
   - rubber stamp of large shareholders
   - no proxy voting implementation
2. Controlling Shareholders
   - dominance in organisational structures, finance, strategy, personal and operation
   - minority shareholders' interests are not well-protected
3. State Ownership
   - Inefficient in supervision
4. Legal Person Ownership
   - non-tradable nature reduces corporate governance
5. Foreign Ownership
   - non-tradable nature discourages foreign investors
6. Banking Reform
   - no role in corporate governance of listed firms
   - banks' own governance problems have not been solved
7. Financial Institutions
   - seeking trading profits, not governance of listed firms
8. Private Ownership
   - powerless in decision-making
   - not cost-effective to exercise governance function
   - avoiding confrontation with management
9. Power Structure & Insider Control
   - power in hands of the largest shareholder
   - insiders control the firms
10. Financial Reporting & Information Disclosures
    - insufficient transparency
    - insufficient accountability & prosecution for wrong-doings

External Mechanisms

1. Financial Market
   - speculative market
   - inside trading
   - weak supervision from regulators
2. Managerial Market
   - insufficient professional managers
   - no market evaluation mechanisms
3. Takeover & Bankruptcy
   - large non-tradable shares leading to no-existence of takeover market
   - no bankruptcy pressure towards listed firms due to lack of enforcement mechanisms

Internal Mechanisms

1. Board of Directors
   - insider-dominated board, controlled by large shareholders
   - no independence for independent directors
   - no voting power for independent directors
   - no accountability for wrong-doings
   - chairman & CEO are controlled by large shareholders
2. Supervisory Board
   - no power for supervisory board over board of directors
   - no independence from board of directors
3. Performance Evaluation & Incentive
   - lack performance evaluation schemes
   - lack incentive schemes
4. Financing
   - difficult to issue bond due to application procedures
   - prefer equity to debt financing due to free of interest obligations

12.6　Summary on Case Analysis

This chapter is ended with a summary of the effect of IPO on both corporate management and corporate governance, in the light of the findings and evidence found in chapter 11 and 12.

The analysis of effect of IPO on corporate management reveals that listed firms experience severe problems in strategic, financial and human resource management, which subsequently contribute to firms' poor performance after IPO. The analysis of effect of IPO on corporate governance suggests that the firms' legal device, external and internal mechanisms are flawed since the beginning of IPO, which are worsen by China's weak legal enforcement mechanisms. The poor performance in corporate management and corporate governance jointly contribute to firms' disappointing financial performance found early in chapter 8. It is recognised that there is a possible causal relationship in which firm performance might also affect corporate governance as corporate governance does on firm performance. For Chinese listed firms, corporate governance mechanisms are newly introduced at the time of IPO, hence corporate governance tends to have impact on firm performance after IPO, not the other way around. Figure 12.3 summarises the determinants in firm performance.

Figure 12.3 Determinants of Financial Performance of Listed Firms in China

The figure demonstrates the determinants of listed firms' performance based on analysis of corporate management and corporate governance practice in listed firms. This figure also further confirms the prediction of the relationship between ownership structure, corporate governance and firm performance in figure 4.2 (pp65).
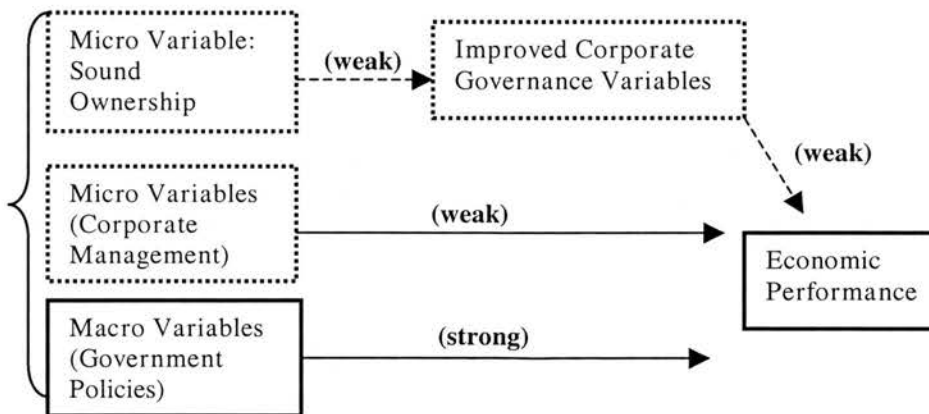
As shown in figure 12.3, firms' economic performance is determined by three factors: corporate governance, corporate management and macro factors, and the associations between corporate management and corporate governance with performance improvement are weak. The evidence from 16 firms suggests that as a result of going public, corporate management and corporate governance in Chinese has changed substantially, but failed to improve firm performance. Given China's transition context, the improvement in corporate management and corporate governance involves further policy reforms, supported by well-functioned legal systems, if they were to improve firms' performance.

Chapter 13   Conclusions & Policy Implications

13.1   Overviews

This thesis investigates the impact of partial share issue privatisation or initial public offering (IPO) on firm performance in China. This thesis consolidates the current limited privatisation research on China. It also challenges the methodology employed in current privatisation studies in examining determinants of firms' performance changes after privatisation, in which ownership structure have been the major explanatory variables. This thesis also provides evidence of effect of IPO on corporate management and corporate governance practice in Chinese listed firms so as to explore their roles in explaining firms' post-IPO financial performance.

A methodology developed by Megginson et al (1994) in their study of global share issue privatisation through comparing firms' post-privatisation versus pre-privatisation performance proxies is employed in this thesis. Most privatisation studies suggest that private ownership is superior to state ownership and should improve firm performance. Many researchers further advocate full privatisation of state-owned enterprises in order to achieve performance improvement and partial privatisation is argued to lead to partial gains in firms' financial performance. This thesis focuses on Chinese listed firms and tries to identify the effect of IPO on firms' financial and operating performance; the causes in firms' performance changes; and the effect of IPO on corporate management and corporate governance that contribute to firms' performance changes.

13.2   Findings[97]
13.2.1 Post-IPO versus Pre-IPO Performance Changes

Findings show that newly privatised firms experience significant performance deterioration in profitability and efficiency, but significant reduction in leverage and improvement in liquidity and output after going public. The findings of this thesis in performance changes are not consistent with major empirical studies comparing post-privatisation versus pre-privatisation performance changes for firms privatised via

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[97] The result of survey study is summarised in Appendix 13.1(pp308-316) and 13.2 (pp317).

share issue privatisation, with just some consistency with one recent country study on China, but not across all performance proxies. In these share issue privatisation studies, newly privatised firms mainly show improvement in efficiency and profitability, and reduction in leverage. In this thesis, almost all profitability and efficiency measures deteriorate after IPO. Real output (or real sales) is found experiencing significant improvement after going public, which may reflect the general growth of the economy in China. The deterioration of all profitability and efficiency performance measures found in this thesis might indicate that share issue privatisation or IPO does not work properly to improve firm performance in China.

Further analysis finds those main sample firms (IPO firms) and minor sample firms (non-IPO firms) perform significantly differently in all performance proxies of profitability, efficiency, leverage and output. Therefore the performance of IPO firms is not the result of same economy cycle, but the effect of IPO. Furthermore, if IPO does improve firm performance, IPO firms should perform at least no worse than non-IPO firms should, especially in profitability and efficiency measures. The results reveal that given the same economic conditions for both IPO and non-IPO firms, both IPO firms and non-IPO firms experience deteriorated performance changes during the same period. Specifically, main sample firms underperform minor sample firms in three important profitability and efficiency measures – return on assets, return on equity and sales assets turnover, which suggests that IPO firms perform worse than non-IPO firms do. Therefore the results confirm that IPO does not work properly for IPO firms to improve their financial performance.

13.2.2 Determinants of Performance Changes

The regression results suggest that the most important performance drivers are public ownership, the presence of employee ownership, share issue size, board size and assets size, and less important explanatory variables include human capital and Herfindahal ownership concentration etc.

- Private ownership is one of the most important performance drivers and is significantly positively associated with most profitability and output improvement. It has a significant positive relationship with return on assets,

return on equity and sales changes, which may indicate that private investors does impose pressure on firms externally and subsequently help to improve firms profitability and output. Meanwhile it is also negatively associated with total long-term debt change, which might suggest that private investors favour less borrowing.

- The presence of employee ownership is significantly positively associated with return on assets and total debt, which might indicate that employee ownership also impose pressure on firms internally and help to improve profitability. But it also has significant positive relationship with total debt level, which might suggest that employee ownership encourage borrowing because equity financing will dilute their shares.

- Share issue size is another important factor that affects firms' performance changes. It is negatively associated with return on assets and return on equity improvement, which might indicate that as more funds are raised from the capital market, the potential for misuse of IPO funds is higher, and firm performance deteriorates subsequently. Share issue size is also negatively associated with total debt, which could be the result of debt payment by share issue proceeds and subsequently lower total debt level.

- Board size is negatively associated with return on sales improvement, but positively correlated with real sales improvement, which may indicate that real sales can be improved through board directors' personal network, but the profitability of the firms remains poor. Larger board size contributes to higher total borrowing because of the free ride of responsibility within the board directors.

- Assets size is negatively correlated with sales, which might indicate that larger firms perform worse than smaller firms do in sales improvement. But assets size is also positively associated with return on assets and return on equity improvement. Given higher total assets and lower sales improvement, larger firms might be in a better position in controlling costs – either through economies of scale or their monopoly position – to improve their return on assets performance. Assets size is also positively associated with return on equity, and the reason could also be cost control or economies of scale by larger firms.

13.2.3 Determinants of Share Price Return

Through regressing firms' post-IPO share price return against post-IPO accounting performance proxies, it is found that investors emphasise short-term liquidity, sales and sales efficiency in share price valuation instead of profitability measures in terms of return on sales, return on assets and return on equity. It is also found that investors generally focus on fundamental performance proxies and ignore supplementary performance proxies in share valuation. Therefore it can be assumed that the stock market does not properly reflect firms' accounting performance.

13.2.4 Case Analysis – Evidence from 16 Firms
13.2.4.1   Effect of IPO on Corporate Management

The evidence from 16 firms further reveal that firms' corporate management and corporate governance practice are problematic after IPO, in which the poor strategic, financial and human resource management are accompanied by weak legal, internal and external corporate governance mechanisms. The results suggest that after IPO, state influence has been changed from mandatory planning to board representation. The state does intervene in employment policies, but it provides supportive policies towards certain high-tech industries. In strategic management, short-termism and speculative diversification emerges after IPO. Proper investment appraisal techniques are not employed to make investment decisions. Research and development basically has not been on the listed firms' strategic agenda. In financial management, cash management is based on the short-term. IPO funds have not been properly used for new investments, but to payback loans or reinvest in stock markets. Generally dividends are not paid to investors. In human resource management, the managerial knowledge structure and employee skills could not cope with business development after IPO. For private listed firms, they are normally been blocked out of the information channel from the governments and have less business freedom. In addition, they are still facing the challenges of gaining social trust from the public. The evidence suggests that corporate management of the firms has been poor, which contributes to firms' poor financial performance after IPO.

13.2.4.2　　Effect of IPO on Corporate Governance

There has been considerable confusion over the meaning of corporate governance in the Chinese context. Some managers and officials regard it as being just a modern way of organisational management, or a set of structures and procedures for regulators and owners of an enterprise to supervise managers. Some simply view corporate governance as one of the "modern" management instruments that could be applied without reference to the social-economic/regulatory/financial context. The IPO has brought institutional changes in listed firms, such as corporate governance in listed firms, but corporate governance has been flawed at the time when firms go public. The weaknesses in corporate governance in China have been reflected in almost every aspect of legal device, external and internal mechanisms.

In legal device, the evidence from case studies suggests that the general shareholders meeting is just a rubber stamp of large controlling shareholders that dominate listed firms in finance, strategy, personnel and operation. In addition, lack of investor relations meetings affects investors' confidence in management. The power structure of a listed firm as defined by law in effect leads to insider control by controlling shareholders. Large non-tradable shares held by state and legal persons in effect prevent the existence of a takeover market. Information disclosure is not transparent and corporate governance scandals hurt investors' confidence severely. Essentially, minority shareholders' interests are not well protected. In external mechanisms, the absence of a takeover market, managerial market and bankruptcy pressure leads to a speculative equity market. Various laws and regulations have been introduced to improve market transparency and to prevent inside trading and price manipulation, but enforcement mechanisms are not in place to force those accountable to take legal obligations and responsibilities of their wrongdoings. In internal mechanisms, the board of directors is in effect an insider board with powerless so-called independent directors. The accountability of senior executives is not well emphasised by law. Independent directors and directors supervisory board are sidelined with neither power nor independence. Given current corporate governance practices in Chinese listed firms, the superior financial performance can not be expected. If the performance of listed firms is determined by a bundle of mechanisms mentioned

above, IPO indeed fails to improve firms' performance by simply imposing these mechanisms on listed firms. Going public or privatisation cannot be expected to solve all aspects of corporate issues, and it may be difficult to achieve performance improvement if corporate infrastructures have not been well developed in the first place.

13.3   Policy Implications

The disappointing performance results after IPO and the corporate management and corporate governance evidence from 16 listed firms suggest that IPO does not work well in China. Therefore Chinese SOEs cannot be privatised first and let the self-regulating power of market forces takes care of all problems 'internal' to the firm. Privatisation works in many other countries because their successful privatisations are based on decent legal infrastructures and market environment that support a complex market economy, otherwise simply privatising SOEs will be rife with problems. China has a less sophisticated legal system and weak enforcement mechanism, and courts are less equipped and judges are less experienced to deal with corporate affairs, leaving the interests of minority shareholders largely been ignored. The speculative equity market and dynamic product market have set huge barriers for listed firms to improve financial performance. Therefore privatisation should primarily be concerned with objectives and direction that will best serve China's economic and social needs. Given China's current economic development, this thesis proposes the following policies to solve some urgent issues so as to improve firm performance in the future.

13.3.1 Legal Reforms

It might simply be politically impossible to get to an ideal state from the existing starting points in China where even civil laws are not well established[98]. But some legal reforms should be considered.

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[98] There is no civil law code and only General Rules introduced in 1986. The legislation in civil law is far behind current circumstances, which leads to failure in solving social and economic issues. Now commercial law and civil law are combined called Commercial Civil Law.

13.3.1.1   Legislation on Transparency & Accountability

Information transparency and managerial accountability is crucial to market integrity. Without them, relationship between listed firms, financial community and investors can not be improved, which would eventually hinder the development of a healthy financial market. Currently in China, with dominant controlling shareholders as a direct result of large state residual shareholdings, minority shareholders are expropriated by controlling shareholders. China has set up substantive corporate law and securities regulation, information disclosure standards and corporate governance code in order to protect minority shareholders' rights and improve corporate governance. But current laws and regulations are silent on accountability of individuals such as corporate mangers and accounting professionals. Therefore legislation in these aspects need to be improved and reinforced through judicial reform.

13.3.1.2   Enforcement Mechanisms - Tribunals

As suggested by Wolfensohn (2002), rules on the books are not enough because corporate directors, public accountants and government regulators alike must believe that rules reflect commonly-shared and socially-reinforced values. The compliance by private parties with corporate governance rules depends on a country's legal culture and respect for rule of law. In addition, more effective regulation will require increased enforcement capability for regulatory bodies. For instance, CSRC lacks independent enforcement authority. The problem faced by many judicial systems – such as quality of judges, weak enforcement of judgements, government interference and corruption – can stand in the way of stronger market regulation. Therefore judicial reforms might be important on the future agenda of lawmakers, in which building enforcement mechanisms is the key to prevent wrongdoings.

Given the fact that it is simply not feasible to convert a country's weak civil law system (such as in China) to common law system, one alternative is to set up a specialised tribunal. This is particularly important since judiciary, legislative and administrative functions are not separated in China, which leads to low efficiency and an ambiguous role of the court in the judiciary system. Furthermore, as civil law

code was newly introduced, it is very difficult for less experienced Chinese judges to deal with emerging new corporate affairs in a fast changing transitional economy. A tribunal with involvement of professional bodies and enforcement power from highest judiciary institutions may fulfil the role of courts in the contemporary business environment. In addition, human capital development in experienced regulators and prosecutors in China takes some time and is crucial to the success of judicial reform.

13.3.2 Ownership Structure Reforms

Because many listed firms were part of larger SOEs, affiliated business groups between listed firms and parent firms become the norm after IPO, and intrafirm transactions used to expropriate wealth from minority investors cannot be easily avoided. Because of the presence of controlling shareholders, managers are often forced to maximise large shareholders' value, which may not necessarily maximise minority shareholders' returns. In pyramidal structures minority owners can be expropriated though intragroup transfers by controlling shareholders. Therefore listed firms' assets could be hollowed out through various transactions such as borrowing funds, entering into production contracts or assets collateral. Corporate law and the previously mentioned tribunal may be used to deal with assets stripping by providing independent judgement and enforcement.

As suggested by Demsetz et al (1985), firms in markets characterised by stable prices, stable technology, and stable market shares can be monitored at relatively low cost. In less predictable environments, managerial behaviour becomes more difficult to monitor. Given the dynamic economic environment in China, monitoring managers requires a concentrated ownership structure. As small shareholders are incapable of or less willing to monitor, ownership concentration is indeed essential. But the question is how ownership should be concentrated - in the hands of the state, legal person, banks, financial institutions, private entrepreneurs, foreign investors or other potential candidates?

- State and legal persons can hardly be effective shareholders and their presence has led to insider control by their representatives. Therefore, the state residual

shareholding should be reduced to activate takeover market as a corporate governance mechanism to discipline listed firms.

- Stated-owned banks provide most of the loans to SOEs. Banks should also be subject to the same corporate governance mechanisms as listed firms, but in fact their own corporate governance represents typical practice in SOEs' and in effect the corporate governance mechanisms are absent. In addition, Chinese banks are inexperienced in governing SOEs and their role has been channelling domestic savings to SOEs as bank loans. Banks' lending practice is not supported by credit rating and they have not been involved in investment activities in a free market due to legislation, including investment in overseas money market[99]. Given banks' weak expertise, experience and lack of monitoring power by law, banks cannot act as major corporate governance force. In the future, the development of an effective system for the governance of banks has become a critical issue.

- The behaviour pattern of securities companies, investment companies and investment funds has largely followed their counterparts in the developed markets. Because of the nature of financial institutions as sole equity holders and their small shareholdings in tradable shares in the market, they are not motivated to improve corporate governance of the listed firms. Therefore an institutional shareholder base needs to develop to improve corporate governance of listed firms.

- Private entrepreneurs can form a driving force in corporate governance, but most of them mainly have experience in running family businesses with less knowledge and understanding in running public companies. Even private entrepreneurs may be amateur to be the dominant force in corporate governance, they may play a very active role in monitoring listed firms if their interests are bound with them. In addition, they can also stimulate corporate governance improvement in the private sector where governance issues have not been well recognised.

- Foreign investors have long been excluded from the A-share market in China with limited foreign investors as legal person shareholders holding non-tradable legal person shares similar to state shares. Foreign investors may help to

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[99] Except Bank of China acts as the Chinese government's representative around the world.

discipline management within China's primitive legal and regulatory environment.

- Klipper (1998) suggests that one of the best models of corporate governance that transition economies can use is the leveraged buyout (LBO)[100] and venture capital fund operating in the West. One advantage is that institutions can act right away if something goes wrong and the LBO firm goes public again as soon as debt has been paid off sufficiently and improvements in operating performance have been demonstrated. LBO may work well in developed markets, but may be less practical in the Chinese transitional context. First of all, it cannot be assumed that those private investors or venture capitalists could have proper incentives given weak legal systems in China. Secondly, there might not be western-style venture capital and venture capitalists out there in the market to construct leveraged buyout firms. Domestic parties involved in listed firms – the state, legal person, financial institutions – are incapable in performing functions as venture capitalists because their own corporate governance is problematic, leaving only foreign investors or domestic private entrepreneurs to play such a role if LBO is feasible.

As suggested by Shi et al (2002), without a credible threat of failure in the form of loss of market share, bankruptcy, delisting, or hostile takeover, the effectiveness of most instruments of corporate governance will be limited. Without threat of failure, stock market participants will not have the incentives to base their investment behaviour on information on company fundamentals, including corporate governance practice. As a result, share prices will not be able to serve as useful market signals in designing compensation contracts, assessing managerial performance and guiding takeover activities.

In order to promote wider share ownership, in September 2000, the Chinese government unveiled a plan to reduce the proportion of state-owned shares from 68% to 30% in two stages. The plan specified several ways to reduce the amount of state-

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[100] In a leveraged buyout, a large fraction of the purchase is debt-financed by venture capitalists. The LBO's shares are held by a partnership of institutions and the high debt in the LBO is not intended to be permanent but designed to be paid down and force improvements in operating efficiency.

owned shares: share replacement, share repurchase, negotiated transfer, auctioning, and debt-equity transfers (Shi et al 2002). Shi et al (2000) suggest that the most appealing way of reducing state shares is through institutional investors. In mass media, reducing state shares through gradual sales has been widely debated, but no consensus has been reached on how to reduce state shareholdings. The following section further discusses reducing state residual shares through direct sales on the open market and through promoting institutional investors, especially foreign strategic investors.

13.3.2.1   Reducing State Residual Shareholdings through Open Sales

There is no consensus on how to reduce state shares in China. The proposal to reduce state residual shares gradually through selling state non-tradable shares at market price has led to huge national debate and has not been welcomed by investors and listed firms and the fairness of the state has been questioned. In fact the fundamental problem is that state residual shares are non-tradable and they are not incorporated in firms' share price valuation and market capitalisation. If the state would sell its residual shares at the current market price, the investors would suffer loss on share dilution. Two options are proposed here.

Option One: If state residual shares are sold through right issue.
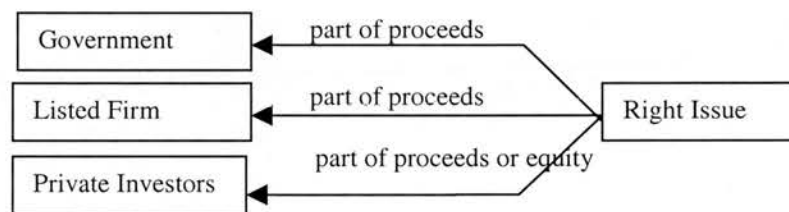
The proceeds of residual shares sold at equity market should be distributed within three parties involved: the state, listed firms and private shareholders. Alternatively, equity could be granted to existing private shareholders if no proceeds will be distributed to them.

<u>Option Two</u>: If state residual shares are reduced through share buyback by listed
firms.
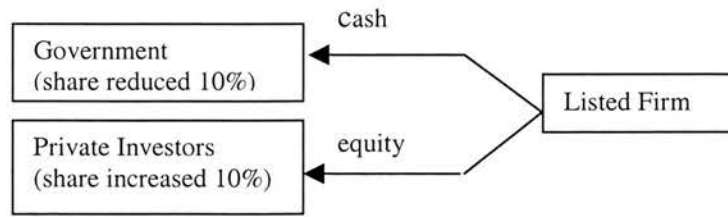
Listed firm then can use cash to buyback shares from state and private shareholder
could be granted with equities. In both scenarios, private shareholders should receive
either cash or new shares.

In addition, there are two related issues that need to be solved: firstly, even non-
tradable shares including state shares and legal person shares can be transferred, in
reality most of these non-tradable shares are very static and have been occasionally
transferred between them. If the state is eligible to sell its non-tradable shares, the
legal person shareholders may require equal treatment to get their shares traded
freely, but this has not been on government's agenda. Secondly, the tradable share
prices are much higher than those of the non-tradable share in the transfer market are
(share transfers within state and legal person shareholders). Therefore it is not
practical for the government to sell non-tradable shares at the current market price.

13.3.2.2   Promoting Foreign Strategic Investors

Listed firms cannot purely depend on themselves to improve corporate governance,
and foreign strategic investors are indeed essential to act as a catalyst in this aspect.
Fung et al (2001) document the association between CEO pay and firm performance
in terms of return on assets and share price return, and the association is quite strong
when investors (such as foreign shareholders) exert pressure. They argue that one
policy implication is that strong and active investors are needed to monitor executive
compensation and to insist on performance related pay, and in particular restrictions
on firms selling shares to foreign investors should be removed. If introducing foreign
investors is indeed feasible, three issues must be resolved: what kind of foreign
strategic investors should be introduced, how do they enter into Chinese equity
market, and how to encourage them to voice or monitor firms. The major task is not
so much introducing foreign investors itself, but to encouraging foreign investors to

voice instead of exit when firms are in trouble. The following three proposals may be applicable in the Chinese context.

(1) What Kind of Foreign Investors?

Tenev et al (2002) suggest that regulations that make it easier for private and foreign-invested firms to list domestically are likely to improve over time the overall quality of listed firms. If foreign strategic investors were allowed to invest in A-share market, three types of foreign investors might be considered: foreign portfolio investors, foreign direct investment investors and foreign commercial banks.

- Foreign Portfolio Investors

China has announced plans to allow so-called Qualified Foreign Institutional Investors (QFII) to buy A-shares under strict regulations. Foreign portfolio investors allowed to invest in equity market can be investment funds, such as mutual funds, or other assets management companies. As discussed earlier, financial institutions in developed markets generally free ride in seeking short-term trading profits and therefore introducing foreign institutional investors on a large scale may well not suit Chinese government's intention to improve poor corporate governance and financial performance of listed firms.

- Foreign Direct Investment Investors

Foreign direct investment investors can also be allowed to take controlling shareholding of the listed firms, and the shares hold by foreign investors should be tradable. The advantages of bring foreign direct investment in listed firms include not only their technology advance but also expertise in corporate governance. Meanwhile, Chinese firms' corporate management can be improved and managers can learn more about investment evaluation and strategic planning.

- Foreign Commercial Banks

Foreign commercial banks are well experienced in corporate governance, and allow them to hold controlling shares and promote their role in corporate governance of listed firms would eventually improve firm performance. For example, foreign commercial banks are well experienced in monitoring public companies and have resources to conduct research and are capable in investment evaluation. On the other hand, it is beneficial for Chinese banks to set up joint ventures with foreign banks

and to become involved in the equity market. Therefore foreign commercial banks can act as an intermediary for Chinese banks to learn advanced practices in lending, conducting investment evaluation, handling non-performing loans, designing financial instruments as well as corporate governance practice in modern commercial banks. China is beginning to accept foreign direct investment in small Chinese banking institutions[101].

(2) How Foreign Investors Enter into Equity Market?

As discussed earlier, reducing state residual shares has been debated for a long time but there has been no consensus on how to distribute sales proceeds and how to deal with share dilution. As mentioned in financial data analysis, government residual shareholdings account for an average of more than 60% of total shares and one off sale or staged sales can reduce them. It is possible that residual shares can be sold to both domestic and foreign investors at a re-evaluated price or through tender offer. Individual investors should be granted a certain amount of shares through right issue and buy those shares at discounted price paid by institutional investors. The government should receive the full proceeds and listed firms could get potential benefits in governance from foreign investors and further debt financing if foreign investors become controlling shareholders beyond certain threshold of shareholding, which will be discussed in the following section. Therefore, all parties involved could become beneficiaries and a good starting point for corporate governance can be set up.

(3) How to Encourage Foreign Investors to Voice?

There should be a mechanism to direct foreign investors as both equity holders and debt holders and encourage them to voice when problems emerge. As mean and median values of long-term leverage ratio of listed firms have declined dramatically to 8.31% and 4.45% after going public, introducing debt financing as a governance mechanism to provide restraints to institutional shareholders is highly desirable. The proposed mechanism could be like this: When the state sells residual shareholdings, foreign investors, such as foreign direct investment investors, foreign portfolio

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[101] See appendix 13.3 (pp318).

investors or foreign commercial banks, can buy those shares at a re-evaluated price. If an investor shareholding crosses certain threshold, say 15% or 20%, these large shareholders are obliged to provide a certain amount of debt financing either in the form of long-term loans or corporate bonds. At the time the state sells its residual shareholding, corporate bonds can also be issued and the equity-debt structure should be based on the needs of a specific firm. The 15%, 20% or other threshold is one way to reduce the possibility of one large controlling shareholder because debt obligation increases as equity shareholding increases. This mechanism in fact encourages the presence of several large minority shareholders instead of one large majority shareholder in a firm. The checks and balances within these large minority shareholders could lead to improved governance practice in Chinese listed firms. In short, as suggested by Shi et al (2002), the larger the size the more difficult exit becomes and the stronger the incentives to assume an active role in corporate governance. Therefore institutional investors are key to developing a Chinese capital market that rewards companies with good corporate governance practices.

13.3.4 Rethinking Supervisory Board

As mentioned earlier, the supervisory board is powerless given current legislation. Schipani et al (2001) suggest that the supervisory board should become a corporate body between the shareholders and the board of directors in the corporate hierarchy, and should hold the power to appoint and dismiss directors. In addition, it should hold statutory decision-making powers with respect to fundamental investment decisions or transaction plans as well as financial and accounting activities. Finally, it should have authority to take legal action against directors or executives on behalf of the corporation. Their proposal in fact suggests that the supervisory board should take over power from board of directors and exercise their functions and can launch litigation against management. If that is the case, then what is the role for board of directors? In fact neither the board of directors nor the supervisory board has the power to supervise the CEO and executives when they are the representatives of controlling shareholders. The current two-board system seems irrational and excessive. If committees within the board of directors serve similar functions to the supervisory board, there would be no need for such a two-tier board system in which three hierarchical structures (supervisory board, board of directors and CEO) might

be counterproductive by producing more bureaucracy instead of delivering higher efficiency, improved governance and better performance. Board committees can be granted enough power to make independent decisions and restrain both executive directors and CEO through a mechanism of one-share-veto by independent directors, especially when independent directors do not take the majority of seats on the board. Furthermore, without the supervisory board, a special board committee incorporating employee representatives can be set up to reflect the stakeholder principle and improve supervision of management by employees.

In short, this thesis recommends that designing and building sound corporate governance mechanisms, reforming legal systems, and promoting institutional investors through various proposed means, such as specifying governance mechanisms, setting up tribunals and introducing strategic foreign investors etc. are prerequisites to firms' performance improvement.

13.4   Limitations & Issues for Further Study

There are some limitations in this thesis and improvement can be made. Firstly, the sample size is not particular large in this thesis in which the listing years under study comprise only two years (firms that went public in 1997 and 1998) and subsequently the window of performance changes examined includes only three post-IPO years and three pre-IPO years. In performance change analysis, some pre-IPO performance proxies cannot be measured due to lack of data, such as employee and cash flow related performance proxies, and more performance benchmarks can be incorporated when data are available. In developing regression models, some potential explanatory variables cannot be examined at the current stage, for instance, the role of executive compensation or incentives. In addition, due to the nature of the data, the ourliers dropped in each model are not the same, which is one of the drawback in this study. It is recognised that some other approaches might be used. For instance, some practitioners would drop the same observations in all equations in model developing.

In regard to future studies, firstly, more effort could be put on the role of corporate governance in examining financial performance of newly privatised firms, especially

in a single country study. Most privatisation studies mainly employ ownership structures and country factors (such as GDP - especially in cross-country studies) to explore the determinants in firms' financial performance changes after privatisation, and corporate governance variables have been largely ignored. In other words, corporate governance has not been regarded as a key factor in financial performance of newly privatised firms. As a country study on China, this thesis employs current available corporate governance variables in examining firm performance. It is recognised that as the capital markets further develop and more transparent data are available, more corporate governance variables could be employed to improve the model developing. In future studies, corporate governance variables should be incorporated into the analysis of performance of newly privatised firms, in studies on both developed and transitional economies. Secondly, various quantitative and qualitative methods such as survey and case study methods could be employed in exploring the broad issues in corporate governance within a large number of firms. Most privatisation studies mainly focus on financial data analysis and have not put focus on the importance of survey and case studies in examining firm performance. In this thesis, both survey and case study methods are used. Even survey study is a failure, it does provide vital information on the role of corporate governance in firm performance, which are further examined by detailed case studies analysis. In future studies, these two quantitative and qualitative methods should be given more emphasis, regardless of privatisation studies in developed or transitional economies.

Finally, in regard to country study on China, as the new private sector further develops and more private firms emerge, studies between SOEs and comparable private firms could be possible. If Chinese government decides to reduce its residual shareholdings and open its domestic markets to foreign strategic investors, the financial performance and corporate governance of both newly privatised and listed firms can be further explored.

Appendix 2.1

TOTAL FACTOR PRODUCTITY

Typically, one would consider that improvements in firm performance would be reflected by such factors as increased profitability, efficiency improvements, and possibly increased output, whilst restructuring would be reflected by such factors as investment spending on fixed capital and/or assets. Therefore, profitability may be defined as in equation (1) below:

$$\Pi = p^1 x - [\, r\,K + w\,L + p^0\,M\,] \qquad (1)$$

Where:
- K - Capital
- L - Labour
- M - Material Inputs
- r - Cost of Capital
- w - Wage Rate
- p^0 - Price of Material Input
- p^1 - Sales Price
- x - Output

Then Output (x) is defined by the general production function:

$$x = A \cdot f\,(\,K, L, M\,) \qquad (2)$$

The correlation between profitability and efficiency may be illustrated by the fact that the general formulation in Equation (2) above included a multiple efficiency term, which reflect total factor productivity:

$$TFP = \frac{x}{f\,(\,K, L, M\,)} = A \qquad (3)$$

And hence increases in total factor productivity will result in reduced unit costs of production and increasing profits.

Source: Bevan, A. A., Estrin, S. and Schaffer, M. E. (1999), Determinants of Enterprise Performance during Transition, CERT Working Paper, Heriot-Watt University, Edinburgh

Appendix 2.2

Definition of Different Types of Shares

This table presents the definition of types of shares in Chinese listed firms. Firms in A-Share market generally have state shares, legal person shares, tradable A shares (private share) and employee shares. Similarly, the types of shares in firms in B-Share market are similar to those in A-Share market, except private shares are tradable B-shares. Firm in both A-Share and B-Share markets can issue shares overseas, such as H share in Hong Kong and N-Share in New York.

State Share (Non-tradable)
Held by central government, local governments, or solely government-owned enterprises. It is recently declared that the ultimate owner of state shares is the State Council of China. State shares are not allowed for trading at the stock exchanges, but transferable to domestic institutions, upon approval of CSRC.

Legal Person Share (Non-tradable)
Owned by domestic institutions or a few foreign institutions or companies. A legal person in China is defined as a non-individual legal entity or institution. Domestic institutions include stock companies, non-bank financial institutions and SOEs not wholly owned by state. Securities firms, trust and investment companies, finance companies and mutual funds are major non-bank financial institutions. Legal person shares are not tradable at stock exchanges, but can be transferred to domestic institutions upon approval of the CSRC.

Employee Share (Non-tradable)
Offered to workers and managers of listed companies, usually at a substantial discount. These shares are designed more like a benefit to employees than as an incentive scheme. Employee shares are registered (as individuals) under the title of the labour union of the company, which represents shareholding employees to exercise their rights. After a holding period of 6 to 12 months, the company may file with CSRC for allowing its employees sell the shares in the open market.

A-Share (Tradable at A-Share Market)
Held and traded mostly by individuals and some by domestic institutions. There is no restriction on the number of shares traded, or on holding periods. It is required that tradable A-share should account for no less than 25% of total outstanding when a company goes public. These shares are the only types of equity that are traded among domestic investors at stock exchanges.

B-Share (Tradable at B-Share Market)
Restricted to foreigners and some authorised domestic securities firms before 2002 and they are denominated in US dollars at the Shanghai Stock Exchange and Hong Kong dollars at the Shenzhen Stock Exchange. A-shares and B-shares issued by the same company carry equal rights and are comparable in all respects except for who can own them and the trading currency. Foreign B-share shareholders tend to be financial institutions based in Europe, Hong Kong, Japan and North America. B share market was open to Chinese domestic investors in November 2001.

H-Share, N-Share etc. (Tradable Overseas)
H-shares are issued and traded at the Hong Kong Stock Exchange. N-shares are listed on the New York Stock Exchange, either through IPOs or as ADRs.

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Re: Survey Questionnaire

Dear (Board) _____Mr Chairman/Ms Chairman:

I am a doctoral researcher from Department of Business Studies at the University of Edinburgh. Please forgive any inconvenience for addressing this letter to you directly.

China's economic development and achievement of listed firms has gained great academic research interests worldwide. Here I attach a **"Survey Questionnaire for Chinese Listed Firms",** in total 2 pages with 13 questions in regards to basic firm level information, and no commercial sensitive questions are asked. **The purpose of this survey is to get basic understanding of Chinese listed firms**. It is highly appreciated if you could fill in this survey within your tight schedule and mail back with enclosed stamped-envelope.

This survey will be used only for academic research, your firm's identity and detailed survey answers are highly confidential and any organisation and individuals are not allowed to gain access to information your provided.

I will report you in written form of general results of this survey study, and would like to hear any of your thoughts and comments.

Thank you for your assistance.

Sincerely Yours

Wei Zhang

The University
of Edinburgh
Management
School

*Company Name (Voluntary):*_____

Correspondent: Angela Zhang
angela.zhang@ed.ac.uk

Department of Business Studies
University of Edinburgh
Survey Questionnaire for Listed Firms in China

Part One: Open-ended Questions

1. Why did your firm go public?

_____

_____

2. What are the long-term objectives of your firm, and what are the short-term ones?

_____

_____

3. What is the major state influence on your firm, and has there been a change in state influence after going public?

_____

_____

4. What are the main changes resulting from going public?

_____

_____

5. How do your describe your firm's relation or communication with financial analysts and investors?

_____

_____

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of Edinburgh
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School

Part Two:

Please tick (√) or specify.

1. To what extent is the industry in which your firm operates regulated by the government:
   -Very high   (   )
   -Relative high   (   )
   -Moderate   (   )
   -Relative low   (   )
   -Low   (   )
   -Others   (please specify)

---

2. Did your firm have assets restructuring (including disposal or acquisition) before going public?
   -Yes   ( )
   - No   ( )   →*if no, please go to question 4..*
3. If yes, how long (approximately) after finishing the assets restructuring did your firm go pubic?

---

4. Did your firm have debt restructuring before going public?
   - Yes   ( )
   - No   ( )   →*if no, please go to question 6.*
5. If yes, how long (approximately) after finishing the debt restructuring did your firm go public?

---

6. Is the board chairman also the chief executive officer in your firm?
   - Yes   ( )
   - No   ( )
7. Please estimate the average executive turnover per year (percentage of executives replaced) in the last three years.

---

8. Is there any performance-related pay scheme in your firm?

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28/06/2001
TO: XXXX Limited Co.

RE: Interview

Dear   Chairman/Chief Executive Officer,

I am a doctoral researcher from Department of Business Studies at the University of Edinburgh.

In order to get better understanding of your firm's experience in business management and corporate governance, it is highly appreciated if you can offer me a chance to conduct a short interview with you or any other senior executives at certain time before 31st September.

The interview time will be no more than one hour, and content includes: major changes after going public; experience and lessons; and your opinions in regards to corporate management and governance. Please also see attached detailed list of interview questions.

It would be highly appreciated if you could confirm the interview date.

Tel: 0136-8839-8649 (mobile)
Fax: 021-6401-8031 (Shanghai)
            028-8543-8673 (Chengdu)
            010-6422-1626 (Beijing)

Sincerely Yours

Wei Zhang

The University of Edinburgh
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Appendix 5.4 Semi-structured Interview Questions

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Interview questions cover three main topics: the impact of going public, corporate management and corporate governance issues.

Going Public

1. What are the main changes resulting from going public?
2. What is the major state influence on your firm, and has there been a change in state influence after going public?

Corporate Management

3. What are the major challenges in improving financial performance? Any solution?
4. Has firm's assets quality improved? Any good experience or lesson?
5. Has firm's cash management improved? Any good experience or lesson?
6. How does firm conduct strategic management, investment and market research?

Corporate Governance

7. Does current corporate governance system work? Any solution?
8. How do you evaluate the roles of independent supervisors and independent directors?
9. How do you describe the relationship between board of directors and shareholders?
10. How do you evaluate performance-related pay and its design? Is there any practice in the firm?
11. How do you communicate with financial analyst and investors (especially small and medium investors)?

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Appendix 7.1 Summary of China's Consumer Price Indexes (1994-2001)

This table summarises the actual and rebased consumer price indexes from 1994 to 2001. Rebased indexes are rebased on 1997 and 1998 consumer price index respectively.

Year	Actual (Previous Year = 100)	Rebased Index 1997=100	Rebased Index 1998=100
1994	124.10	120.72	125.10
1995	117.10	113.91	118.04
1996	108.30	105.35	109.17
1997	102.80	**100.00**	103.63
1998	99.20	96.50	**100.00**
1999	98.60	95.91	99.40
2000	100.40	97.67	101.21
2001	100.70	97.96	101.51

Data Source: Datastream-Economics Data Series.

Appendix 7.2 Statistics of Performance Proxies Over Seven Years

The following Panel A to Panel I present summary statistics of all performance proxies of 127 main sample firms over pre-IPO and post-IPO years. Mean, median, standard deviation, minimum and maximum values of each performance proxy are presented in separate panels. Year 0 represents the year of going public, and the years before and after year 0 under study are denoted as negative and positive numbers accordingly.

Panel A: Return on Sales (ROS)

	-3	-2	-1	0	1	2	3
Mean	0.198	0.202	0.193	0.200	0.181	0.119	0.086
Median	0.141	0.139	0.143	0.169	0.173	0.132	0.103
Std. D	0.196	0.196	0.169	0.179	0.266	0.369	0.308
Minimum	0.006	0.012	0.012	-0.733	-2.101	-3.486	-2.306
Maximum	1.177	1.204	0.988	0.939	0.838	0.848	0.634

Panel B: Return on Assets (ROA)

	-3	-2	-1	0	1	2	3
Mean	0.139	0.143	0.127	0.081	0.078	0.057	0.043
Median	0.116	0.120	0.113	0.079	0.074	0.058	0.045
Std. D	0.111	0.110	0.068	0.034	0.051	0.042	0.040
Minimum	0.002	0.025	0.014	-0.104	-0.215	-0.143	-0.135
Maximum	0.811	0.896	0.456	0.199	0.230	0.194	0.121

Panel C: Return on Equity (ROE)

	-3	-2	-1	0	1	2	3
Mean	0.406	0.366	0.288	0.123	0.101	0.056	0.003
Median	0.320	0.327	0.276	0.117	0.118	0.096	0.081
Std. D	0.585	0.212	0.112	0.050	0.245	0.417	0.573
Minimum	0.005	0.100	0.078	-0.274	-2.219	-4.538	-5.742
Maximum	6.555	1.397	0.618	0.318	0.379	0.228	0.207

Panel D: Real Sales (SALES - m)

	-3	-2	-1	0	1	2	3
Mean	38.06	52.09	62.40	72.22	85.48	100.71	123.64
Median	16.85	23.01	30.17	36.48	42.82	53.03	56.00
Std. D	65.10	94.55	111.74	126.53	135.68	157.55	200.76
Minimum	0.69	1.31	3.16	5.74	7.73	5.84	2.79
Maximum	502.69	632.01	821.50	869.74	857.51	1077.40	1215.44

Appendix 7.2   Cont'd

Panel E: Sales Assets Turnover (SAT)

	-3	-2	-1	0	1	2	3
Mean	0.941	1.000	0.940	0.571	0.574	0.542	0.540
Median	0.797	0.809	0.772	0.450	0.447	0.449	0.421
Std. D	0.615	0.753	0.818	0.464	0.453	0.456	0.462
Minimum	0.085	0.118	0.156	0.113	0.102	0.041	0.029
Maximum	4.150	4.801	6.064	2.804	2.691	3.151	2.886

Panel F: Quick Ratio (QR)

	-3	-2	-1	0	1	2	3
Mean	1.121	0.918	0.945	2.270	1.755	1.539	1.439
Median	0.731	0.766	0.822	1.847	1.377	1.245	1.237
Std. D	2.271	0.850	0.560	1.661	1.408	0.943	0.860
Minimum	0.034	0.191	0.098	0.262	0.304	0.153	0.133
Maximum	23.256	9.158	3.725	9.636	10.105	5.224	4.540

Panel G: Net Working Capital to Total Assets (NWCTA)

	-3	-2	-1	0	1	2	3
Mean	0.101	0.101	0.113	0.320	0.238	0.220	0.193
Median	0.088	0.098	0.111	0.351	0.247	0.217	0.233
Std. D	0.176	0.159	0.148	0.194	0.166	0.182	0.211
Minimum	-0.531	-0.474	-0.499	-0.189	-0.234	-0.654	-0.743
Maximum	0.609	0.503	0.456	0.722	0.728	0.670	0.581

Panel H: Total Debt (LEV1)

	-3	-2	-1	0	1	2	3
Mean	0.607	0.589	0.546	0.339	0.372	0.383	0.404
Median	0.627	0.624	0.581	0.335	0.391	0.382	0.388
Std. D	0.167	0.151	0.150	0.151	0.167	0.163	0.162
Minimum	0.043	0.034	0.078	0.036	0.038	0.035	0.115
Maximum	1.000	0.897	0.868	0.733	0.935	0.968	0.979

Panel I: Long-term Debt (LEV2)

	-3	-2	-1	0	1	2	3
Mean	0.228	0.201	0.174	0.084	0.091	0.086	0.072
Median	0.208	0.175	0.138	0.037	0.039	0.030	0.041
Std. D	0.209	0.190	0.172	0.119	0.135	0.136	0.260
Minimum	0.000	-0.035	-0.001	-0.004	-0.190	-0.394	-2.446
Maximum	0.874	0.878	0.830	0.665	0.696	0.684	0.768

Appendix 7.3 Statistics of Post-IPO versus Pre-IPO Changes in Performance Proxies

The following Panel A to Panel I present summary statistics of changes of post-IPO versus pre-IPO in performance proxies of 127 main sample firms. Mean, median, standard deviation, minimum and maximum values of average three years pre-IPO, average three years post-IPO, and changes between post-IPO versus per-IPO performance proxies are presented in respective panels.

Panel A: Changes in Return on Sales (ΔROS)

	ROSb (Pre-IPO)	ROSa (Post-IPO)	ΔROS (Changes)
Mean	0.198	0.129	-0.069
Median	0.146	0.140	-0.019
Std. Deviation	0.183	0.294	0.297
Minimum	0.012	-2.493	-2.591
Maximum	1.123	0.773	0.187

Panel B: Changes in Return on Assets (ΔROA)

	ROAb (Pre-IPO)	ROAa (Post-IPO)	ΔROA (Changes)
Mean	0.136	0.059	-0.077
Median	0.116	0.060	-0.066
Std. Deviation	0.090	0.038	0.083
Minimum	0.022	-0.137	-0.548
Maximum	0.694	0.165	0.038

Panel C: Changes in Return on Equity (ΔROE)

	ROEb (Pre-IPO)	ROEa (Post-IPO)	ΔROE (Changes)
Mean	0.353	0.054	-0.300
Median	0.321	0.102	-0.223
Std. Deviation	0.237	0.326	0.389
Minimum	0.100	-2.757	-2.897
Maximum	2.387	0.198	0.034

Panel D: Changes in Real Sales (ΔSALES)

	SALESb (Pre-IPO)	SALESa (Post-IPO)	ΔSALES (Changes)
Mean	0.715	1.604	0.889
Median	0.716	1.373	0.703
Std. Deviation	0.272	0.803	0.886
Minimum	0.128	0.320	-1.942
Maximum	2.262	5.169	4.826

Panel E: Changes in Sales to Assets Turnover (ΔSAT)

	SATb (Pre-IPO)	SATa (Post-IPO)	ΔSAT (Changes)
Mean	0.960	0.552	-0.408
Median	0.808	0.452	-0.357
Std. Deviation	0.671	0.442	0.423
Minimum	0.120	0.057	-3.047
Maximum	4.756	2.733	0.324

Panel F: Changes in Quick Ratio (ΔQR)

	QRb (Pre-IPO)	QRa (Post-IPO)	ΔQR (Changes)
Mean	0.995	1.578	0.583
Median	0.811	1.359	0.483
Std. Deviation	1.000	0.935	1.238
Minimum	0.145	0.199	-6.681
Maximum	8.933	6.332	5.706

Panel G: Changes in Net Working Capital to Total Assets (ΔNWCTA)

	NWCTAb (Pre-IPO)	NWCTAa (Post-IPO)	ΔNWCTA (Changes)
Mean	0.105	0.217	0.112
Median	0.109	0.236	0.106
Std. Deviation	0.142	0.171	0.175
Minimum	-0.475	-0.524	-0.553
Maximum	0.494	0.640	0.844

Panel H: Changes in Total Debt (ΔLEV1)

	LEV1b (Pre-IPO)	LEV1a (Post-IPO)	ΔLEV1 (Changes)
Mean	0.581	0.386	-0.194
Median	0.611	0.376	-0.196
Std. Deviation	0.142	0.154	0.160
Minimum	0.057	0.095	-0.621
Maximum	0.866	0.922	0.243

Panel I: Changes in Long-term Debt (ΔLEV2)

	LEV1b (Pre-IPO)	LEV2a (Post-IPO)	ΔLEV2 (Changes)
Mean	0.201	0.083	-0.118
Median	0.162	0.045	-0.095
Std. Deviation	0.172	0.156	0.182
Minimum	0.000	-1.010	-1.158
Maximum	0.846	0.687	0.282

Appendix 9.1   Efficiency & Liquidity Models in Performance Change Regression Analysis

1.   Efficiency Model - ΔSAT Model

ΔSAT = **0.077 - 0.851 PLC - 0.635 CON** - 0.004ST - 0.073EMP - 0.058HMC
        (0.559)   (-2.343)   (-3.847)   (-0.038)   (-0.689)   (-0.661)

        - 0.141SSIZE + 0.105BOD + 0.077CRS + 0.063ASIZE - 0.046YR - 0.102IND
            (-1.552)   (1.223)   (0.890)   (0.597)   (-0.522)   (-1.177)

R² = 0.115   Observations: 124
Adjusted R² = 0.10   F = 7.853   Sig. = 0.000

(Equation A)

In developing the model, cases 6, 46 and 110 are outliers and are eliminated in the regression model because their presence violates the assumption of constant variance across predicted ΔSAT. These outliers have large standardised residuals of -9.707, -4.727 and -6.727 respectively. Further investigation confirms that these three firms are in retailing, chemical and construction businesses. In addition to their superior performance during the pre-IPO years, their performance decline dramatically more than average firms do, which leads to the extreme deterioration in sales to assets turnover compared with their pre-IPO years.

The scatterplots between model error variance and predicted values of change in sales assets turnover (ΔSAT) and between model error variance and explanatory variables reveal that model error variances have been constant at all levels of predicted value of ΔSAT. The following is the scatterplots between model error variance and predicted value of ΔSAT.

Figure A. Scatterplots between Model Error Variance and Predicted Value of Change in Sales Assets Turnover (ΔSAT)

This figure demonstrates that the assumption of homoscadasticity is met since model error variances are constant across predicted values. Cases labelled as 6, 110 and 46 are three omitted cases with large standardised residuals.
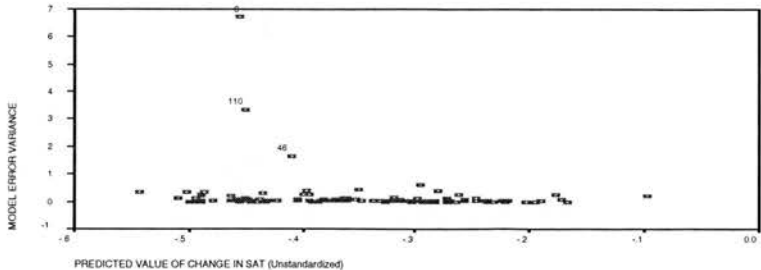
The three omitted cases with large standardised residuals are labelled in figure A. As the result of omission of these outliers, the model error variances are constant as predicted values of ΔSAT increase and the assumption of homoscadasticity is met.

The model suggests that both Herfindahal concentration index and private ownership are negatively associated with sales assets turnover change, where 1% increase in ownership concentration index leads to 0.635% decrease in sales assets turnover change, and 1% increase in private ownership leads to 0.851% decline in sales assets turnover change. But due to the low adjusted R² of 10%, the interpretation of the model should be in caution.

2. Liquidity Models – ΔNWCTA & ΔQR Models

(1) ΔQR Model –Change in Quick Ratio Model

ΔQR = 2.36 - 0.049BOD - 0.453 ASIZE + 0.060ST + 0.008PLC - 0.148EMP
    (4.456)   (-1.851)   (-2.550)   (0.655)   (0.076)   (-1.638)

        + 0.114CON - 0.017HMC + 0.159SSIZE - 0.015CRS + 0.073YR + 0.059IND
           (1.202)   (-0.189)   (1.497)   (-0.175)   (0.813)   (0.676)

R² =   0.085   Observations: 123
Adjusted R² = 0.070   F = 5.579   Sig. = 0.000

(Equation B)

In developing the model, cases 63, 82, 90 and 111 are outliers and are eliminated in the regression model because their presence violates the assumption of constant variance across predicted ΔQR. These outliers have large standardised residuals of -7.217, -9.614, 6.561 and 4.666 respectively. Further investigation confirms that these firms are in steel, travel, electronic equipment and chemical businesses. Cases 63 and 82 experience a dramatic decrease in quick ratio, cases 90 and 111 experience large increase in quick ratio during post-IPO years, which leads to extreme deterioration or improvement in quick ratio compared to their pre-IPO performance.

The scatterplots between model error variance and predicted values of change in quick ratio (ΔQR) and between model error variance and explanatory variables reveal that model error variances have been constant at all levels of predicted value

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of ΔQR. The following is the scatterplots between model error variance and predicted value of ΔQR.

Figure B. Scatterplots between Model Error Variance and Predicted Value of Change in Real Sales (ΔQR)

This figure demonstrates that the assumption of homoscadasticity is met since model error variances are constant across predicted values. Cases labelled as 82, 63, 90 and 111 are four omitted cases with large standardised residuals.
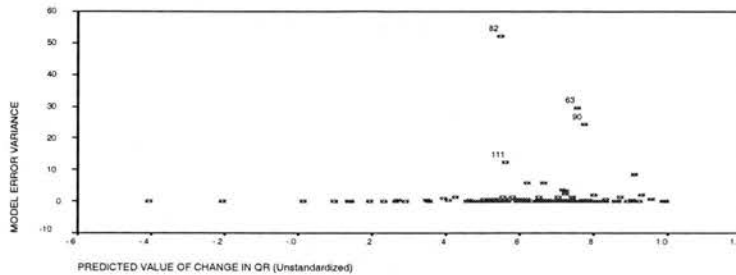
The three omitted cases with large standardised residuals are labelled in figure B. As a result of omission of these outliers, the model error variances are constant as predicted values of ΔQR increase, and the assumption of homoscadasticity is met.

The ΔQR model suggests that board size is negatively associated with change in liquidity, and increasing one board director contributes to 0.049 decrease in liquidity change, but the significance is only at 10% level. The model also reveals that assets size is negatively associated with quick ratio, and 1% increase in assets size contributes to 0.453% decrease in quick ratio. But due to the low adjusted R^2 of 7%, the interpretation of the model should be in caution.

(2) ΔNWCTA Model –Change in Net Working Capital to Total Assets Model

ΔNWCTA = 0.120 - 0.009 BOD + 0.063YR + 0.072 IND - 0.122ST + 0.103PLC
         (1.896)   (-1.748)   (2.397)   (2.714)   (-1.404)   (1.181)

         - 0.031EMP - 0.029CON - 0.012HMC - 0.001SSIZE - 0.051CRS - 0.096ASIZE
            (-0.338)   (-0.328)   (-0.144)   (-0.009)   (-0.593)   (-1.084)

R^2 =   0.115   Observations: 124
Adjusted R^2 = 0.093   F = 5.180   Sig. = 0.000

(Equation C)

In developing the model, cases 33, 61 and 111 are outliers and are eliminated in the regression model because their presence violates the assumption of constant variance across predicted ΔNWCTA. These outliers have large standardised residuals of

-5.224, 4.955 and 3.020 respectively. Further investigation confirms that all three cases are in electronic equipment business. Case 33 performs extremely badly during its post-IPO years, while case 61 and 111 perform well above average in net working capital to total assets during their post-IPO years, which leads to their extreme performance changes

The scatterplots between model error variance and predicted values of change in quick ratio (ΔNWCTA) and between model error variance and explanatory variables reveal that model error variances have been constant at all levels of predicted value of ΔNWCTA. The following is the scatterplots between model error variance and predicted value of ΔNWCTA.

Figure C. Scatterplots between Model Error Variance and Predicted Value of Change in Net Working Capital to Total Assets (ΔNWCTA)

This figure demonstrates that the assumption of homoscadasticity is met since model error variances are constant across predicted values. Cases labeled as 33, 61 and 111 are three omitted cases with large standardised residuals.
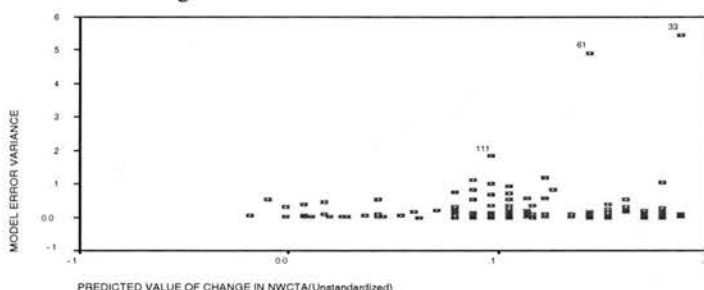
The three omitted cases with large standardised residuals are labelled in the figure C. As the result of omission of these outliers, the model error variances are constant as predicted values of ΔNWCTA increase, and the assumption of homoscadasticity is met.

The model suggests that board size is negatively associated with change in liquidity, and increasing one board director contributes to 0.009 decrease in networking capital to total assets. Firms that went public in 1997 perform better than those firms that went public in 1998 by 0.063 in net working capital to total assets. Firms from industrial sector outperform firms from other sectors by 0.027 in networking capital to total assets. But due to the low adjusted R^2 of 9.3%, the interpretation of the model should be in caution.

Appendix 12.1 China's Enrons

Since late July 2001, the China Securities Regulatory Commission (CSRC) has reprimanded a number of listed companies for violating provisions relating to financial reporting and management. A few of the highest-profile cases include:

Zhengzhou Baiwen Co., Ltd.

Henan-based Baiwen, a state-owned retail firm, listed on the Shanghai Stock Exchange in April 1996. Exactly three years later it became one of the first companies that CSRC temporarily delisted, after it reported losses of ¥957 ($116 million) in 1999—the largest one-year loss by a listed PRC company. CSRC later found that the company had inflated profits by ¥19 million ($2.3 million) before its listing and by ¥144 million ($17.4 million) in the three years that it was listed. The company was reportedly found guilty of insider trading and publishing misleading annual reports. CSRC also fined Baiwen's accountants for falsifying audits. In mid-2002, leather products firm Sanlian Group finalized a purchase of 50 percent of the company.

Guangxia (Yinchuan) Industry Co., Ltd.

Guangxia, a listed pharmaceutical company, falsified profits for several years to present itself as a fast-growing entity with sophisticated, state-of-the-art technologies. The company fabricated sales contracts and export figures and exaggerated its financial statements, reportedly inflating net profits by ¥745 million ($90 million). CSRC initiated an extensive probe of the company in August 2001, and the Ministry of Finance eventually stripped the accounting license of its longstanding auditor, leading observers to nickname Guangxia the "Chinese Enron."

Most China share indices fell after state media reported regulator probing longtime stock darling biochemical firm Guangxia.

Sanjiu Pharmaceutical Co.

CSRC uncovered Sanjiu's troubles in mid-2001. The listed company, which was reportedly China's largest pharmaceutical group, had misappropriated ¥2.5 billion ($302 million) on behalf of a few major shareholders and related business partners without the consent of other shareholders or the public. These diversions amounted to 96 percent of the company's net assets, posing considerable threat to the company's operations. CSRC reprimanded the senior principals, headed by former military serviceman Zhao Xinxian, and fined the company ¥150 million ($18.1million). Major shareholders and related business partners had repaid ¥349 million ($42.2million) to Sanjiu by March 2002. Zhao remains the company's legal representative and the company continues to operate, publishing a quarterly report for the first quarter of 2002.

Lantian Co., Ltd.

Lantian listed on the Shanghai stock exchange in 1996 and was hailed as the first publicly listed Chinese ecological agricultural company. Immediately after the IPO, however, investors grew suspicious of the company's soaring share price and incredibly strong profit growth because its business lines, lake fisheries and lotus processing, were unlikely to generate profits at that level. In 2000, the company had reported ¥1.84 billion ($222 million) in sales income but only ¥8.5 million ($1 million) in accounts receivable—an impossible gap for a legitimate company. Lantian said that it had settled most of its transactions with cash. Analysts have estimated that the company fabricated 2000 net profits of up to ¥500 million ($60 million).

Poor corporate governance in China begins before a company is approved for listing. Firms such as Lantian and Baiwen Co. Ltd. were in effect phoney entities even before their IPOs, which is partially the result caused by the governments in selecting firms for listing.

Appendix 13.1   Survey Study Analysis

Because of the transitional context in China, it is expected that survey study may encounter difficulties due to the following reasons:

- Information disclosure is not a standard practice but a new phenomenon, not only at government level, but also at firm level;
- Survey, as a research methodology is not widely employed not only in academic research but also in industry.

Therefore on the one hand, firms may be not willing to disclose information to outsiders; on the other hand, firms may not be familiar with such research strategy and tend to turn it down. After consulting one Beijing-based domestic research company, it was discovered that normally it takes a long time to get a response and the company's previous experience shows that companies tend to turn down questionnaires and response rate normally is around 5%, whether small or large samples.

1. Pilot Study

The pilot survey was conducted to improve survey questions and get some basic understanding of how firms would react to questionnaires. Questions asked are designed not to be too sensitive to answer, or too ambiguous to draw the line and define. With a pilot study, any difficulties in questions can be detected and quality can be improved.

In June 2001, 28 questionnaires were sent out to 28 randomly chosen firms listed at the Shanghai Stock Exchange. From those 28 questionnaires, only 4 firms responded. Originally, the compensation of CEO and senior management was asked, no respondent would like to answer this question. Personal income is a highly sensitive issue, which may not only involve individual income tax issue, but may also suppose to leak "inside" information on executive compensation to private shareholders. One fact is that firms may not publish these informations honestly in their annual financial reports, but keep actual payment figures as inside information.

Therefore, in the later formal survey study, the original question of:

> *Can you give senior managers' annual compensation package (including*
> *base salary, bonus and stock options)?*

was modified to:

> *Is there performance-related Incentive pay scheme in your firm?*

Obviously, the modified question is very ambiguous and the measurement is not precise, but it is a more approachable question given the reasons mentioned above. The final questionnaire questions after modification are shown in appendix 5.2 (pp293-294). The low response rate in the pilot study was disappointing and although it was not a success, it still could provide some limited information about listed firms.

2. Survey Study

After the pilot study, a further 243 questionnaires, including all 138 firms that went public in 1997 and 1998 (main sample firms) were sent out in early July 2001, together with stamped return envelopes. The results of the survey study were disappointing. From July 2001 to March 2002, 19 questionnaires were sent back, and one survey was conducted by telephone at the firm's request. Therefore 20 out of 243 questionnaires were answered and the response rate was around 9%. Therefore, the survey is a failure; nevertheless, a general description of results is presented in the following section.

3. Data Analysis

If the response rate is only 9%, survey results obviously do not represent majority-listed firms, and can only be used to get some understanding of corporate management and governance issues in listed firms. It is recognised that reasonably successful firms tend to respond and hence survey results would be potentially biased towards relatively successful firms and should be interpreted with caution. This section will analyse open-ended questions and close-ended questions separately.

(1) Open-ended Question Analysis
Question One: Why did your firm go public?

In general, survey firms normally have two purposes for going public, which are far beyond traditional motivation of financing in developed markets. As shown in

appendix 13.2 (pp317), the purposes of going public for listed firms are divergent. Ten out of 20 firms regard financing is the most important purpose, eight firms expect corporate governance can be improved and six firms hope sound modern corporation system with diversified ownership structure can be set up after going public. Five firms expect listing would help to boost market share, promote firm awareness and new business opportunities. Three firms expect that the financial market would help their managers to improve managerial skill. Two firms expect that they can be more innovative after going public and two firms simply state that becoming listed itself is important.

Instead of financing, going public has a very different meaning in China. Even Chinese listed firms do recognise the importance of corporate governance, they expect the financial market to do more good for them than financing, such as building modern corporation system or developing managerial skills that have been well-established before firms go public in the West. The starting point for listed firms before they went public was fairly low, with absence of basic corporate governance mechanisms of a modern corporation and insufficient managerial skills which are essential in public companies in the West.

Question Two: What are the long-term objectives of your firm, and what are the short-term ones?

Only four firms give both long-term and short-term objectives, seven firms state only long-term objectives, seven firms state only short-term objectives, one firm gives an irrelevant answer and one firm did not answer at all. Those seven firms which state only long-term objectives seem do not have clear long-term strategies but mainly plan statement, such as "best in sector", "most competitive company" etc. It is not clear whether they have well-defined short-term strategies or not. Seven firms that only state short-term strategies demonstrate similar patterns in their short-term strategic moves. Two firms stress high competition and pressures on long-term investment activities and but fail to find solutions. Five firms directly or indirectly indicate their intention either to change their core businesses or launch diversification. For instance, one firm would abandon its import and export as core businesses; one firm would diversify from service industry to drug industry; two manufacturing companies are interested to be investment companies; one firm would diversify from energy business to nano-technology business. In fact these perceived

short-term strategies by the firms are long-term strategies in the sense that some diversification can only be achieved in the long-term, such as changing core businesses. The pattern reveals that due to competition and dynamic of business environment, firms tend to go for diversification if they cannot find good business solution and deliver performance in the short term. In regard to those four firms that state both long-term and short-term strategies, one computer firm and one bank stick to their core businesses without mentioning diversification, the other two firms specifically emphasise their plan for unrelated diversification in the bio-tech business and related diversification in high-tech business.

The above analysis shows there are four significant characteristics in firms' long-term and short-term strategies:

- Some firms do not have clearly defined short-term and long-term strategies;
- Some firms do not distinguish short-term and long-term strategies;
- Changing core business is a common strategy when firms face competition or investment pressures;
- Diversifying into high-tech business is a very popular investment strategy.

Question Three: What is the major state influence on your firm? Has there been a change in state influence after going public?

Strong government influence reflects in macro level in terms of industry policies, and at the micro level in terms of organisational structures and recruitment policies etc. Eight out of twenty firms state strong government influence in industry policies, such as price control in utilities and drug industry, but relaxed and privileged policies towards high-tech industry and research institutions, such as tax exemption. These eight firms are generally in highly regulated industries, such as the utility sector of water, energy, electricity, public transport, as well as banking and drug industries. Research-intensive firms receive privileged policy at both the central and regional government levels. For instance, one research-intensive firm states that it enjoys five years tax exemption after going public. Three firms state strong government influence in organisational structure, management appointments and compensation policies of the firm. Six firms state moderate influence from government, and they are heavy-loss firms, privately owned firms and firms with less strategic importance to the government. Three firms suggest there is no influence from government and they are located in less developed central or northern parts of China, and they are

either in traditional manufacturing (not involving in high-tech business) or trading business.

Therefore from the point view of these listed firms, government influence could have double effects – advantageous or disadvantageous. If firms are in regulated industries, industry policies are strongly influenced by government, as well as firms' organisational structure, management appointment and compensation policies. Meanwhile, government has less interest in firms with less strategic importance or in loss.

Question Four: What are the main changes resulting from going public?

As shown in Panel B of appendix 13.2 (pp317), there are various changes occurred after going public. Eleven firms claim improvements in corporate governance practices, ten firms suggest improved financing for investment, six firms claim improvements in their investment and operational management, five firms indicate improvement in building modern corporation systems, three firms claim improved market share and one firm states that employees are more motivated as a result of going public. Re-examining Panel A of purpose of going public, the top two purposes of going public coincide with the top two changes in Panel B, which may indicate that going public does serve firms' major purposes in financing and corporate governance to some extent. But unfortunately, the purpose to improve managerial skills and technical innovation mentioned in Panel A of purpose of going public appear unimproved as they are missing in Panel B of changes after going public, which may indicate that managerial skills might not be improved automatically after IPO.

Question Five: How do your describe your firm's relation or communication with financial analysts and investors?

One firm did not answer this question. With nineteen valid answers, three firms only discuss investor relations, nine firms discuss communication with financial analysts, the remaining seven firms discuss both their communication and relation with financial analysts and investors. As shown in Panel C of appendix 13.2 (pp317), only four firms could describe their communication with financial analysts as good, and three firms claim they have good communication with investors. The remaining firms' relationship with either financial analysts or investors is basic and limited. The

distant relationship between listed firm and investors and the financial market may indicate that short-termism of capital market and lack of investment mentality from both financial community and investors prevents listed firms from relationship building.

(2) Close-ended Question Analysis

The close-ended questions are reorganised as relevant topics and results are presented accordingly.

Topic One: To what extent is the industry in which your firm operates regulated by the government, with very high, relative high, moderate, relative low, low or others.

Government influence is measured from very low to very high, in which six firms and seven firms indicate relative low and moderate influence respectively, and four firms suggest it is very high. Those firms with high government influence are either in utility or drug industry and manufacturing firms receive much lower influence.

Topic Two: Did your firm have asset restructuring (including disposal or acquisition) before going public? If yes, how long (approximately) after finishing the assets restructuring did your firm go pubic?

Nine out of twenty firms conducted asset restructuring before going public, and the other eleven firms did not. After finishing restructuring, it took firms from a few months to two years to finally go public, and the average waiting period was one and half years. If firms went public immediately after asset restructuring, new financing from the market and potential improved corporate management and corporate governance may well have stimulated the effects of asset restructuring on firm performance. Since firms wait for a long time to go public after asset restructuring, the potential effect of restructuring on performance may diminish in the pre-IPO period. The results may indicate that firms could not take advantages of pre-IPO asset restructuring to improve financial performance after going public.

Topic Three: Did your firm have debt restructuring before going public? If yes, how long (approximately) after finishing the debt restructuring did your firm go public?

Four out of seventeen[1] firms conducted debt restructuring and majority firms did not, which may indicate that firms that perform well are chosen to be listed. For those firms that conducted debt restructuring, it took them around half to two years to go public and the average is one year. Similar to asset restructuring, if firms went public immediately after debt restructuring, the effect of debt restructuring on firm performance may have been well stimulated by potential improved corporate management and corporate governance and subsequently reflected in post-IPO performance. If firms went public long time after debt restructuring, the potential effect of debt restructuring on performance may diminish in the pre-IPO period. The results may indicate that firms could not take advantages of pre-IPO debt restructuring to improve financial performance after going public.

Topic Four: Is the board chairman also the chief executive officer in your firm?

Sixteen out of twenty firms have separated the role of chief executive officer and board chairman, which indicates that firms have been following the requirement from China Security Regulatory Commission (CSRC).

Topic Five: Please estimate the average executive turnover per year (percentage of executives replaced) in the last three years.

Executive turnover per year can be as low as zero and as high as 60%, and fifteen out of eighteen firms[2] have executive turnover lower than 30%, including managerial appointments from state agencies. The results may suggest that executive teams have been stable and furthermore, outside managers can hardly be introduced into listed firms.

Topic Six: Is there any performance-related incentive pay scheme in your firm?

Sixteen out of twenty firms state they have an ambiguous performance-related pay scheme, but not stock option like incentive scheme.

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[1] There are three missing values.
[2] Three are two missing values.

Discussion:

It is difficult to draw any conclusion from the data because of the low response rate, but one interesting pattern can be found in these 20 cases. Using government influence as category, the mean value of executive turnover and mode value of combine role of chief executive officer and board chairman are summarized in figure A[3].

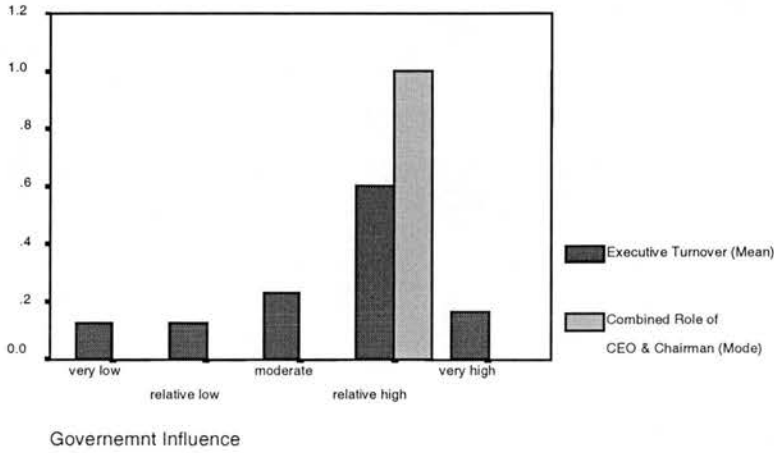**Figure A Executive Turnover & its Connection with Government Influence**

Figure A shows that with higher government influence, mean value of executive turnover turns to be higher and relative high government influence is associated with highest mean value of executive turnover. In addition, mode value of combined role of chief executive officer and board chairman is also associated with relative high government influence. The possible explanation is that when government influence is relatively strong, but not very strong, firms tend to have high executive turnover and combined role of CEO and Chairman as a result of government intervention in management appointments and organizational structures. Consistent with results from earlier discussion, firms in regulated industries are more strongly affected by government industry policies as well as government influence in organisational structure, management appointment and compensation policies.

4. Summary

Survey results show that firms have divergent purposes for going public, ranging from conventional financing, corporate governance, and organisational changes to managerial skills etc. Besides financing and corporate governance, the financial

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[3] Executive turnover is a continuous variable, and therefore mean value is used; combined role of chief executive officer and board chairman is a dummy variable and therefore mode value is used.

market is expected to solve all problems at every aspect of corporate sector and obviously some of them cannot be achieved simply through exposure to the financial market. For instance, managerial skills need support from the existence of managerial market, quality of national education system, development of business culture and private sector entrepreneurship together with other government policies. After going public, many firms indicate some extent of improved corporate governance, and government's influence is mainly on firms in regulated industries or others with strategic importance. Changing core business and diversification are common investment strategies, which are partially by-products of either government industry policies – privileged policies in high tech or strict policy control in several highly regulated industries. Diversification seems to be an optimal strategy to get out of either old businesses or government control, and enter into a more investment policy-friendly business regime. Due to pressure on competition and investment opportunities, highly speculative stock market, weak firm-financial community and weak firm-investor relations, firms have difficulties to identify or distinguish their long-term and short-term strategies. As a result of that, diversification towards high-tech business is the solution.

Results also reveal that asset and debt restructuring activities do not prevail, and a possible explanation could be that profitable firms or profitable parts of larger group companies are chosen for listing. On the other hand, firms cannot take advantage of asset and debt restructuring to enhance their post-IPO performance because they have to wait for more than one year to finally go public. Most firms also have separated the roles of chief executive officer and board chairman, and performance-related pay has been designed, but details are too sensitive to be given. Executive turnover is stable and outside managers can hardly be introduced into the firms. It seems that higher government influence is associated with higher executive turnover and combined role of chief executive officer and board chairman, which confirms government's strong influence on organisational structure, executive appointment and compensation policy in some regulated industries.

Appendix 13.2 Summary of Survey Results
This table summarises survey results based on the order of questions in the questionnaire.

Panel A   **Purpose of Going Public**

Rank	No. of Firms	Purposes
1	10	financing
2	8	corporate governance
3	6	modern corporation system with diversified ownership structure
4	5	business & development
5	3	managerial skills
6	2	technical innovation
7	2	just become listed (awareness)

Panel B   **Major Changes after IPO**

Rank	No. of Firms	Changes (improvement)
1	11	corporate governance
2	10	financing
3	6	investment & operation
4	5	modern corporation system with diversified ownership structure
5	3	awareness & marketing
6	1	employee motivation

Panel C   **Communication/Relation with Financial Analysts & Investors**

No. of firms	Communication / Relation	Reasons
	Communication/Relation with Financial Analysts	
3	basic, distant	market speculation; focusing on capital gains ignore company fundamentals focusing on short-term profits focusing on insider information
3	very limited	n/a
4	moderate	consulting role
4	good	consulting role
	Communication / Relation with Investors	
4	basic, market speculation short-term relationship	focusing on capital gains; lacking investment mentality
3	good	n/a

Appendix 13.3   Some Chinese Banks with Foreign Minority Investments

	Year (Investment)	Shares (%)	Foreign banks
China Everbright Bank	1996 1997	3.03% 20.7%	Asian Development Bank China Everbright Holding Co. Ltd. (HK)
Bank of Shanghai	1999/2001 2001 2001	7% 8% 3%	IFC HSBC Shanghai Commercial Bank (HK)
Nanjing City Commercial Bank	2001	15%	IFC
Future Minority Investments			
(Announcement)	Year	Shares (%)	Foreign banks
Shanghai Pudong Development Bank	2003	5%	Citigroup Inc.
China Minsheng Bank	2003 2003	1.22% 8%	IFC Hang Seng Bank (HK)

Sources: Howson, Nicholas C. and Lester Ross (2003), Foreign Minority Equity Investments in Chinese Commercial Banks, The China Business Review, July-August, 2003.

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