School of Economics and Finance

Private Equity Takeovers in Australia: Three Essays on Motivation, Managerial Share Ownership and Governance Effects

Mamunur Rashid

This thesis is presented for the Degree of

**Doctor of Philosophy
of
Curtin University**

July 2012

Declaration

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

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

Signature: ………………………………………….

Date: …………………………...

Dedication

Dedicated To

My beloved parents, Md Ishaque Sarker (died on 17 November 1993) and Ms Josna Begum, who brought me into this world and taught me how to live in this world

AND

All those martyrs who laid down their lives during the greatest War of Independence in 1971 for the freedom of our country, Bangladesh

Acknowledgement

I am immensely grateful to the Almighty Allah, who Has given me the mental strength and ability to complete this dissertation.

I am indebted to my PhD Supervisor Associate Professor Dr Subhrendu Rath. His continuous support, meaningful suggestions and sincere academic guidance helped me overcome numerous difficult stages during the completion of this dissertation. His timely and constructive advice navigated me towards the successful completion of this thesis. I would also like to express my indebtedness to Associate Professor Dr Ruhul Salim, Thesis Committee Chairperson for offering me continuous support and guidance towards the successful completion of this dissertation. I am also thankful to my Associate Supervisor Dr Dane Etheridge for his excellent and timely assistance in completing this dissertation.

I express my intense appreciation to Khulna University, Bangladesh for granting me study leave to pursue my PhD research at Curtin University. I am also thankful to the Australian government and Curtin Business School (CBS) for providing me a *Curtin Business School (CBS) Doctoral Scholarship* to finance my doctoral research here. Without this financial support it would not have been possible to pursue my doctoral study in Australia.

Also, I am indebted greatly to my wife Dr Taslima Begum and to my two children Ahnaf Rashid and Labib Rashid for taking the painful experience of staying away from me for such a long time. My wife took care of all my family affairs keeping me free from all sorts of responsibilities which greatly helped me arrive at this stage. I am also thankful to my mother, sister, brothers and all other family members for their continuous support. Without such cooperation from my family, the completion of this dissertation would have taken much longer time.

I sincerely acknowledge the support of Mr Muammer Reza, Research Associate, School of Economics and Finance, for his heartiest and timely cooperation in providing data and econometric software for my research purpose. In addition, I am thankful to Ms Kitty Delaney, CBS Faculty Librarian, for her assistance in

organizing the referencing software that helped me finalize this dissertation in a timely manner.

I am also greatly indebted to Ms Jo Boycott, former CBS Research Students' Coordinator and Dr Laurie Dickie, former CBS Research Students' Academic Coordinator, who extended their helping hands and guidance in times of need. Without their continuous support, it would have been extremely difficult to come to the completion stage.

I am also thankful to my friends and colleagues, Md Rezaur Rahman, Ms Shykh Hasina, Dr AFM Kamrul Hassan, Dr M Nasir Uddin, Dr Md Salequzzaman, Feroz Ahmed, Md Faridul Islam, Md Atiqul Ahsan, Md Enayet Hossain, Md Fazlul Rabbanee, Md Iftekhar Robin, Dr Shahriar Kabir, Md Nuruzzaman, Shah Azam, Mostafa Md Monjur Hasan, Mahmud Hossain Riazi, Md Farid Uddin Khan and Dr Shuddhasattwa Rafiq, all of whom continuously offered me their emotional support when needed. I have enormously been benefitted from their caring support and assistance.

Abstract

Private equity transactions have grown considerably during the last few years. With an increase in the growth and size of this market, it has become increasingly important to understand the economic forces behind these transactions. Extant literature lacks adequate research in this area and studies on the Australian context are scarce. This thesis is a rigorous empirical investigation of the interaction of three aspects of Australian private equity transactions; namely, information asymmetry and undervaluation, managerial shareholdings and corporate governance.

Using a unique hand-collected dataset and a matched-sample of firms from 1990 to 2010, I developed and tested a predictive choice model that distinguishes firms going private through private equity from firms that do not. The empirical results show that market undervaluation, rather than information asymmetry, is the dominant factor in going private. Further, it was found that institutional holding is a significant deterrent to private equity investment decision.

I also analysed the importance of high managerial ownership and undervaluation as determinants in private equity deals in Australia. Results show that firms taken over by private equity firms suffer from market undervaluation and have high managerial shareholdings, a condition which is likely to motivate managers to take their firms private. Confirming extant theoretical arguments of non-linear relationship between managerial shareholding and firm value, supporting evidence was found in the Australian market.

Finally, I investigated the effect of managerial shareholdings and corporate governance on private equity takeovers. Evidence is presented of a significant non-linear relationship between managerial ownership and firm-specific governance characteristics. This evidence indicates that corporate governance practices have a significant impact on a firm's choice of going private. In addition, evidence is provided that market for corporate control is active in Australia and plays a disciplinary role as, and when, necessary.

Table of Contents

List of Tables

List of Figures

List of Abbreviations

ACSI	Australian Council of Superannuation Investors
AFAANZ	Accounting and Finance Association in Australia and New Zealand
ANZ	Australia-New Zealand
APA	Airline Partners Australia
ASIC	Australian Securities and Investments Commission
ASX	Australian Securities Exchange
AVCAL	Australia Private Equity and Venture Capital Association Limited
BIND	Board Independence
BRDSZ	Board Size
BSO	Board Shareholdings
CA	Australian Corporations Act, 2001
CAPEX	Capital Expenditure
CEO	Chief Executive Officer
CGC	ASX Corporate Governance Council
CURR	Current Ratio
DUAL	CEO-Chair Duality
EV	Enterprise Value
FCF	Relative Free Cash Flow
IBOs	Institutional Buyouts
IFSA	Investment and Financial Services Association
INST	Institutional Shareholdings
IPO	Initial Public Offerings
LBOs	Leveraged Buyouts
LNAGE	Log of Age
LNSA	Log of Total Sales Revenue
LNTA	Log of Total Assets
LVG	Leverage Ratio
MBIs	Management Buy-in
MBOs	Management Buyouts
MFA	Malaysian Finance Association
MSO	Managerial Shareholdings
MTB	Market-to-Book Ratio
ORBIS	Bureau van Dijk Global Database
PE	Private Equity
PTP	Public-to-private
SDC	Securities Data Corporations
THREAT	Takeover Threat
UK	United Kingdom
US	United States of America

CHAPTER 1

INTRODUCTION

"Over a decade and a half after Michael Jensen predicted the eclipse of the public corporation, his 'active' investors surfaced publicly in Australia and attracted the same 'backlash' as it was observed occurring in the US.........While private equity has long been a source of finance for companies........the volume of private equity funds has increased substantially in Australia in the last two years. Notable also are the small number of high profile publicly listed companies that have passed into private ownership due to purchase by private equity consortiums. Some of the companies acquired, and those targeted, were not necessarily viewed by analysts as under-performing. The targeting of companies like Qantas by private equity consortiums added to a perception that the new owners planned to increase profit by 'tightening' operations.....".

Westcott, 2009; pp. 1 – 2.

1.1 Introduction

In February 2007, a consortium of private equity investors known as Airline Partners Australia (APA) launched a bid for a private takeover of Qantas, one of the largest and best known public corporations in Australia. The bid later collapsed due to mounting pressure of political concerns and rival bidding; however, it raises concerns with regard to the increasing trend of private equity takeovers in recent times. Fidrmuc *et al.* (2007) argue that going private transactions have been accelerated during the last few decades with a view to improve firm performance. Corporate finance literature embodies a number of studies on going private and Private Equity (PE) takeovers, most of which are primarily based on United States of America (US) and United Kingdom (UK) data (see, e.g., Halpern *et al.* 1999; Weir *et al.* 2005a and 2005b). Studies on Australian going private transactions focus primarily on the implications of financial and governance characteristics of target firms (Chapple *et al.* 2010; Evans *et al.* 2005; Eddey *et al.* 1996). Little research to date has investigated the interaction of asymmetric information, undervaluation, incentive alignment and monitoring mechanism on the likelihood of firms going private in the context of private equity. In this study, three different, but interlinked, aspects of PE takeovers are examined in an Australian context. These aspects relate to asymmetric information and undervaluation as motivation for going private, high managerial ownership (used as a proxy for incentive alignment) as a driving force in going private and the role of corporate governance mechanism in going private.

Private equity takeover, in its most common form, involves a public-to-private (PTP) transaction which takes place when a publicly quoted company is taken over by a PE firm and the target company goes private through a delisting from the stock market (Frankfurter and Gunay 1992). PE investment activities in Australia have grown to record levels in recent years. According to the 2010 yearbook of the Australian Private Equity and Venture Capital Association Limited (AVCAL), private equity investment in Australia has increased from $585 million in 2001 to $1,456 million in 2010. Although PE bidders are not studied much (Chapple *et al.* 2010), the growth of these transactions in capital markets is significant and has attracted regulatory concerns with the Australian Senate holding a parliamentary inquiry into the private equity investment in Australia[1] after the incident with Qantas. Notwithstanding the development and heightened interest in going private activities in Australia, the empirical research on what motivates PE transactions in Australia is very limited. Given the increase in the growth of this market in Australia, it is important to extend the current literature on PE deals focusing on such motivations. Using a sample of Australian Securities Exchange (ASX) going private firms from 1990 to 2010, I investigate an often cited reason for going private, asymmetric information and undervaluation in the context of private equity takeovers in Australia. In addition, I examine if high managerial ownership and corporate governance characteristics determine the going private decision in Australia.

An obvious outcome of the problem of asymmetric information between managers and outside shareholders is the non-observance of true and potential value of a corporation. Neither the value of assets in place nor the value of future investment opportunities are simple to determine due to the lack of available information. Managers, who are likely to have superior information, perceive that the share price does not reflect the true potential of their firm (Kaplan and Stromberg, 2009). The asymmetric information problem is aggravated further with increasing difficulty in using the equity market to finance available investment opportunities. The resultant low share price deters the interest of institutional shareholders and fund managers. Inadequate analyst coverage also contributes to investor uncertainty. This lack of sufficient interest from outside investors creates further illiquidity in the capital market (Bharath and Dittmar, 2010). All these forces provide incentives to the managers to take the firm private to capture the

---

[1]Commonwealth of Australia, Private Equity investment in Australia, Senate Standing Committee on Economics, August, 2007.

underlying value of the firm. Mehran and Persitiani (2010) argue that publicly listed firms failing to sustain sufficient financial interest and visibility are more likely to undertake PTP transactions. In addition, Renneboog and Simons (2005) also argue that financial visibility is an important determinant in the decision to go private for public firms.

Despite the role of asymmetric information on firm valuation and its subsequent effect on private equity takeovers, the extant literature in this area has been limited. The only Australian study in this area is the Chapple *et al.* (2010) study, which is an exploratory investigation into the characteristics of private equity takeovers. The first aspect of PE takeovers that I examine in this study is the information asymmetry and undervaluation of the public firm as a rationale for going private through PE takeovers. Potentially, this study provides an important contribution to the current literature as the interaction of asymmetric information and undervaluation and their subsequent impact on private equity takeovers have not been examined before.

While asymmetric information and undervaluation can lead to the decision to go private, managerial shareholdings also can act as a driving force in a public firm's going private decision. Literature suggests a number of incentive devices that can align the interest between insiders and outside shareholders (North, 2001). Jensen and Meckling (1976) argue that increased share ownership may reduce the non-value maximizing behaviour of managers. However, evidence suggests that excessive ownership may induce managers to behave opportunistically (Demsetz, 1983). The fact that going private transactions can increase efficiency in firm operations in the absence of public monitoring and oversight (Jensen, 1989) stems from an ineffective incentive device (Fidrmuc *et al.* 2007) that results in a misalignment between insiders and outsiders. While Jensen and Meckling (1976) believe high ownership stakes bring about a convergence of interest between managers and outsiders, Morck *et al.* (1988) present evidence that suggests managers may become entrenched with excessively high ownership stakes. In such a situation, managers would prefer to retain full control over their firm and this makes traditional acquisition more difficult. Following on from this, high managerial ownership is more likely to increase a firm's likelihood of going private since PE firms often require managers to have a meaningful equity stake within their firm (Jensen, 1989).

The presence of asymmetric information may result in managers holding a large share of their firm's stock (Lelenad and Pyle, 1977; Opler and Titman, 1993). Managers may not be willing to disseminate sufficient information to attract new investors which may divest control. This suggests that high ownership stakes, including the presence of managerial private information, might create further impetus for going private decision. Consistent with this, Filatotchev *et al.* (1999) find that managers can become hostile towards outside ownership and want to maintain control when they have high ownership stakes. Therefore, it is reasonable to argue that the increase in management shareholdings is likely to be driven by their efforts to preserve control. The evidence presented by Filatotchev *et al.* (1999) provides further reason to suggest that managers with high ownership stakes have strong incentives to take their firm private to maintain control.

Regardless of the fact that high managerial ownership increases the likelihood of firms going private in the US and in the UK (Maupin *et al.*1984; Maupin, 1987; Weir *et al.*2005a), the extant evidence in this area in the Australian context is limited. The second aspect of PE takeovers that I examine to fill this gap is the importance of high managerial ownership of the public firm as a determinant for going private through PE takeovers. This study is expected to bring new evidence into the corporate finance literature as the impact of managerial ownership on PE takeovers has not been examined before in the Australian context.

Going private transactions are considered to be a result of a misalignment between insiders and outsiders because of lack of effective incentive devices (Cumming *et al.* 2007; Jensen, 1989). Florackis and Ozkan (2009b) argue that managerial opportunist behaviour is more prominent in firms with ineffective monitoring mechanisms. In effect, appropriate governance mechanisms play a role to limit the suboptimal managerial behaviour and align the interest between managers and outsiders. Keasey *et al.* (2005) suggest that the development and adoption of good governance codes within the firms is expected to improve the alignment between insiders and outsiders. With increasing importance being attached to align the manager-shareholder interests, it is necessary to examine the role of governance mechanisms in reducing this agency conflict.

Literature suggests that, in the absence of effective internal monitoring mechanisms, the market for corporate control will play a disciplinary role (Jensen and Meckling, 1976;

Morck *et al.* 1988). Consistent with this, Weir and Wright (2006) argue that companies that went private had been the subject of takeover speculation whilst being publicly quoted and those companies are considered to have ineffective internal monitoring. The market for corporate control, therefore, is regarded as a substitute for weak internal governance (Kini *et al.* 1995). A number of studies also have found that companies going private have an ineffective internal governance structure and have experienced takeover speculation (Lehn and Poulsen, 1989; Eddey *et al.* 1996; Weir *et al.* 2005a; Weir and Wright, 2006). Thus, the evidence suggests that firms going private are more likely to have an ineffective internal governance structure. In addition, they are more likely to experience takeover pressure from the market.

I believe that internal governance mechanisms should be considered more important than traditional market for corporate control in disciplining sub-optimal managerial behaviour. Despite a considerable body of research on corporate governance mechanisms (Florackis and Ozkan, 2009a), the current literature does not encompass empirical studies on the interplay of governance mechanisms and going private transactions in the context of private equity in Australia. The third aspect of PE takeovers that I examine in this study addresses this gap by focusing on the impact of firm-specific governance characteristics in going private through private equity takeovers in the Australian context. This aspect is particularly important for Australia since the ASX Corporate Governance Council (CGC) introduced the Principles of Good Corporate Governance and Best Practice Recommendations only in March 2003 to be implemented from 2004 annual reports onwards (Henry, 2004).

1.2 Objectives of the Study

Evidence suggests that firms are more likely to go private when they are undervalued with less analyst coverage (Bharat and Dittmar 2010). Leland and Pyle (1977) argue that information asymmetry increases the adverse selection cost for investors since this type of firm has low financial visibility. As a result, firms will be more likely to go private to avoid the adverse selection costs. Also, Merton (1987) shows that the benefit of being publicly listed is minimized with lower investor recognition. In addition, studies on going private transactions suggest that ineffective incentive devices and sub-optimal corporate governance mechanisms provide impetus for public firms to go private (Halpern *et al.* 1999; Weir *et al.* 2005a; Weir and Wright, 2006). Consistent with this,

Jensen (1986) argues that going private increases efficiency because of the presence of higher debt and better alignment of the management incentives.

The majority of research on going private transactions has focused on the financial and governance characteristics of firms going private, the fairness of the price paid to the minority shareholders in taking a company private, analysis of cost and benefits of the decision to go and the financial performance of firms that have gone private (Evans *et al.* 2005). Most of those studies focused on US and UK going private deals with a little attention to PE deals. Australian research on going private transactions is so far limited to one empirical study (Chapple *et al.* 2010) on PE deals, a study that explores the financial characteristics of Australian PE deals. As a result, Australian research on private equity has received little attention in the academic literature. Considering the recent surge and significance of PE investments worldwide (Cumming *et al.* 2007), formal studies into the nature and interplay of these investments are warranted. With the existence of a number of studies on the financial and governance characteristics of target firms in PE transactions, I am not aware of any research linking the asymmetric information, undervaluation, high managerial ownership and corporate governance mechanism and their interplay in the likelihood of firms going private through PE takeovers in Australia. Therefore, this study contributes to the literature by filling several of the above mentioned gaps and adds new evidence to the Australian evidence on PE deals. In doing so, the study addresses the following principal objectives:

- To examine empirically the influence asymmetric information and undervaluation have on the decision to go private by publicly listed firms
- To examine empirically the impact of high managerial ownership in the decision to go private by publicly listed firms
- To examine empirically the impact of corporate governance practices in the decision to go private by publicly listed firms

1.3 Significance of the Study

The outcomes of this study are expected to contribute to the body of knowledge as follows:

- Empirical research on going private transactions and private equity takeovers is mostly limited to US and UK; this study will contribute to the development of this literature as applied in the Australian context.

- No empirical evidence is available with respect to Australia in determining the impact of undervaluation and high managerial ownership in the decision to go private by publicly listed firms; this study will provide new evidence on undervaluation and managerial ownership as determinants of going private through private equity takeovers in Australia.

- Empirical evidence on the relationship between firm value and managerial shareholdings is exclusively limited to the US firms; this study will also provide empirical evidence on the relationship between firm value and managerial shareholdings as applied in the Australian context. From the regulatory perspective, this will help identify possible legislative or judicial changes to align shareholders' and managers' interests and develop appropriate guidelines of managerial competencies in managing corporate resources.

- This study uses the arguments for going private transactions and develops those same arguments applicable to private equity takeovers. Thus, the analysis in this study will enable future studies on private equity takeovers to use these arguments to analyse the implications of private equity takeovers across different countries.

- Good governance practices are recommended only from 2004 in Australia (Henry, 2004). The current study will explore the effectiveness of internal governance mechanisms in going private decision in Australia and results will help policy makers to understand the effectiveness of existing internal governance mechanisms and consider revising the same, if necessary.

1.4 Summary of the Findings

It is estimated that approximately twelve percent of all takeover announcements in the Australian Securities Exchange are PTPs[2]. Using a unique hand-collected dataset of private equity takeover firms and a matched-sample of firms from 1990 to 2010, I empirically examine the distinguishing characteristics of firms going private and firms that do not.

---

[2] Data from Securities Data Corporation (SDC) Platinum ANZ M&A Database

The empirical analysis shows that market undervaluation, rather than information asymmetry per se, is the dominant factor in the likelihood of firms going private through PE takeovers in Australia. The results are robust to alternative measures of valuation. Further, it is found that institutional holdings significantly deter private equity takeover decision.

Evidence is presented that high managerial ownership significantly increases the likelihood of Australian firms going private through PE takeovers. Consistent with the literature, I also find some evidence of a significant non-linear relationship between managerial ownership and firm valuation in the Australian context.

The third major finding in the study is that corporate governance practices have a significant impact on a going private decision. In addition, a significant non-linear relationship is found between managerial ownership and firm-specific corporate governance characteristics. Furthermore, strong evidence is presented that the market for corporate control is active in Australia.

The current ratio is found to be highly significant and positive, revealing a strong positive relationship between liquidity and the likelihood of going private. My results are surprising with regard to leverage ratio which is significant and takes on a positive value. This result is in contrast to the theory of financial slack as advanced by Jensen and Meckling (1976), but consistent with the opportunistic behaviour by private equity investors. Combined with the empirical results regarding the effect of liquidity, the result suggests that private equity investors in Australia are opportunistic (Chapple *et al.* 2010) in taking advantage of financially unhealthy firms with high liquidity. Table 1.1 presents the summary of results:

Table 1.1: Summary of the Findings

Construct	Hypothesis	Findings
Asymmetric Information	Firms with high information asymmetry are more likely to be subjected to PE transactions	Weak support
Undervaluation	Firms with lower market valuation are more likely to be subjected to PE transactions	Strong support
Incentive Alignment	Firms with high managerial ownership are more likely to be subjected to PE transactions	Strong support
Internal Monitoring	Target Firms in a PE led bid are more likely to have ineffective internal governance structure	Strong support
External Monitoring	Target Firms in a PE led bid are more likely to experience takeover pressures	Strong support

1.5 Organization of the Thesis

The thesis is structured around a three-paper format. These papers examine three different aspects of private equity takeovers in the context of Australia. The papers are placed in chapters four, five and six and are designed for submission to conference and journal reviews. Two of those papers have been presented at 2012 AFAANZ (Accounting and Finance Association in Australia and New Zealand) Conference, 2012 MFA (Malaysian Finance Association) Conference and Curtin University Seminars. The third paper will be presented at the 25th Australasian Finance & Banking Conference to be held at the University of New South Wales, Australia in December 2012. As a whole, the thesis consists of seven chapters including the present chapter. The rest of the thesis is structured as follows:

Chapter 2 presents a critical review of previous literature that provides the motivation for examining the impact of asymmetric information, undervaluation, managerial ownership and corporate governance practices on the going private decision. The present study hypothesizes that information asymmetry, undervaluation, high managerial ownership and ineffective governance mechanism provide impetus to the publicly listed firms to go private through PE firms in Australia. Accordingly, the review chapter explores the

literatures on the above issues as they relate to going private and private equity takeovers specifically.

Chapter 3 discusses the data sources for this study; also, it includes discussions on the descriptions of variables and sample selection procedure.

Chapter 4 presents the first aspect of private equity takeovers that I examine in this thesis. The chapter presents the paper on the interplay of asymmetric information, undervaluation and private equity takeovers in Australia; the paper presented at the 2012 AFAANZ Conference.

Chapter 5 presents the second aspect of private equity takeovers that I examine in this thesis. The chapter presents the paper on the interplay of undervaluation, incentive alignment and private equity takeovers in Australia; the paper presented at the 2012 MFA Conference in Corporate Finance.

Chapter 6 presents the third aspect of private equity takeovers that I examine in this thesis. The chapter presents the paper on the interplay of incentive alignment, monitoring mechanism and private equity takeovers in Australia; the paper will be presented at the 25th Australasian Finance & Banking Conference to be held at the University of New South Wales, Australia in December 2012.

Chapter 7 provides a summary of major findings from the empirical analysis in this study. Conclusions are drawn from these findings followed by discussion of policy implications and the contribution of the thesis. In addition, this chapter discusses some limitations of the study and scope of further research.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

The recent rise in PE transactions internationally has raised concerns among academics, practitioners and regulators. Corresponding to these concerns, there is an increasing need for an evaluation of the impact of these transactions (Cumming *et al.* 2007). In addition, with the increasing growth in the number of PE transactions, as noted by Bharath and Dittmar (2010), it becomes increasingly important to understand the economic forces that drive a firm to go from public to private. Growing international evidence on financial and governance characteristics of target firms in PE-led bids supports the existence of a correlation between corporate governance structure and PE takeovers (Cumming *et al.* 2007). However, what is less clear from this evidence is the link between market undervaluation, high managerial ownership and the likelihood of those firms to be involved in PTP transactions through PE firms. This chapter reviews an array of previous empirical studies on these relationships.

The principal-agent theory generally is considered a starting point for any debate on corporate governance issues. The theoretical underpinnings for much of the extant research in corporate governance are found in the classic thesis, 'The Modern Corporation and Private Property' by Berle and Means (1932); the thesis describes the basic agency problem of separation of ownership and control in modern firms. Modern corporations are characterized by the separation of ownership and control because they are run by professional managers who may not be unaccountable to the dispersed shareholders. As such, the owners are confronted with selecting the most capable managers and giving the managers right incentives for putting in appropriate effort that maximizes shareholders' wealth. Agency relationships are further defined by Jensen and Meckling in their seminal paper in 1976. Jensen and Meckling (1976, pp. 308) defined agency relationships as contracts under which "one or more persons (principal) engage another person (agent) to perform some services on their behalf, which involves delegating some decision-making authority to the agent". Conflict of interests between

managers and outside shareholders arise because managers are motivated to extract rents out of corporate resources. As a result, it is necessary to reduce this agency conflict to increase the value of the firm. Agency costs may include auditing, budgeting, control and compensation systems, bonding expenditures by the agent as well as any residual loss that may occur due to divergence of interests between the principal and the agent. (Jensen and Meckling, 1976). Literature suggests that improved and effective corporate governance mechanisms are necessary to reduce this agency conflict and induce managers to be more accountable to outside shareholders (Cumming *et al.* 2007). During the last few decades there has been increased attention on corporate governance mechanisms for the purpose of improving company performance. Corporate governance has now become a mainstream concern for policy makers around the globe (Netter *et al.* 2009). Just after the Asian Financial Crises, the global corporate sector was shaken by corporate governance scandals in the US and Europe that triggered some of the largest insolvencies in history. Therefore, the corporate world and policymakers began to recognize the potential macroeconomic consequences of weak corporate governance systems (Khan, 2007).

The remainder of this chapter is structured as follows. Section 2 provides a comprehensive theoretical background on corporate governance and the discussion then flows to the takeover market, going private transactions and private equity takeovers. Section 3 describes an overview of the institutional arrangements in Australia in relation to the takeover market. Section 4 presents a comprehensive review of the empirical literature worldwide, including Australia. A summary of the chapter is presented in Section 5.

2.2 The Theoretical Underpinnings

Corporate governance practices have critical implications on firm performance. As a result, improving corporate governance has been a priority in developed market economies for over a few decades (Netter *et al.* 2009). The Asian crisis and the relative poor performance of the corporate sectors in Africa have made corporate governance an important agenda in the development debate as well (Berglof and Thadden, 1999). A number of recent studies show that good corporate governance increases efficiency in firm operations. For example, Gompers *et al.* (2003) show that companies with strong shareholder rights yielded annual returns that were 8.5 percent greater than those with

weak rights. Claessens *et al.* (2002) argue that better corporate frameworks benefit firms through greater access to financing, lower cost of capital, better performance and more favorable treatment of stakeholders. A weak corporate governance system not only leads to poor firm performance but is also conducive to macroeconomic crises like the 1997 East Asian crisis (Berglof and Thaden, 1999).

2.2.1 Corporate Governance

The main purpose of corporate governance is to assure investors of getting a return on their investment. Everywhere around the world, the advanced market economies in particular, there is considerable disagreement on the quality of existing corporate governance mechanisms. As Shleifer and Vishny (1997) believe, the US, Germany, Japan and the UK have some of the most sophisticated corporate governance systems around the world. In some less developed countries, corporate governance mechanisms are practically nonexistent. Therefore, understanding corporate governance not only informs the discussions on the improvements in advanced economies, but may also encourages major institutional changes in places where they need to be made (Shleifer and Vishny, 1997).

Corporate governance mechanisms have been scrutinized in a considerable number of studies during the past few decades. As Novikova (2004) argues, the concept of corporate governance is the system by which corporations are directed and controlled. The corporate governance structure identifies the allocation of rights and responsibilities among different stakeholders and lays out the rules and procedures for making decisions. The system also provides the way through which company goals are set and the means of achieving those goals and monitoring performance. To advance the definition in a systematic way, one may say then that corporate governance may be defined narrowly (Shleifer and Vishny, 1997) as the relationship of a company to its shareholders and more broadly (Randoy and Nielson, 2003) as its relationship to the society. According to Mayer (1997), corporate governance is concerned with aligning the interests of outside investors and managers. Corporate governance may be explained also as the relationship between the corporate performance and corporate accountability (Simon and Hughes, 1997). However, corporate governance systems worldwide are not the same in terms of the ownership control of firms. Fama and Jensen (1983) argue that separation of ownership and control is the result of an efficient form of economic organization.

2.2.2   Internal and External Control Mechanism

Chowdhury (2006) argues that all corporate governance systems revolve around four core principles: fairness, accountability, responsibility and transparency. The specific challenges of upholding these principles depend on the ownership structure of the corporate sector (Chowdhury, 2006). In effect, corporate governance is a set of arrangements that enforce the discipline between managers and outside shareholders. The company's policies, strategies, reporting system, board of directors, independence of the directors and establishing audit committee are fundamental parts of good governance. In addition, Annual General Meeting is the primary platform where shareholders can raise their concerns towards attaining good governance (Tadesse, 2004). Based on the basic theories of corporate governance, there are three key aspects of internal corporate governance: ownership structure, monitoring mechanisms and management incentives (Novikova, 2004).

The market mechanism can also protect outside investors from the opportunistic behaviour of managers or controlling shareholders. In the absence of effective market mechanisms, asymmetric information and ineffective monitoring enable managers to misallocate resources, often at the expense of the majority shareholders (Talukdar, 2007). A well-functioning capital market can facilitate good governance through information production and monitoring where shareholder rights are recognized. However, in the absence of such recognition the market for corporate control also can play its important monitoring role in corporate governance, as poorly managed companies will become takeover targets (Morrison, 2004). Takeovers, a market mechanism to discipline the opportunistic behaviour of insiders, are treated as value-increasing actions so that the new entity might improve its operation through better monitoring and control. In addition, it is sometimes considered as an external mechanism for disciplining top management when internal corporate governance mechanism is weak or has failed to do so (Borstadt *et al.* 1991). Figure 2.1 shows the interaction between internal and external governance mechanism:

Figure 2.1: Internal and External Governance Mechanism

Figure 2.1 explains the interplay of governance mechanism. If internal mechanism does not adhere to its role, there is a possibility that the internal actors would dominate the corporation and this triggers self-serving behaviour by incumbent management. This managerial opportunistic behavior, henceforth, necessitates a corrective action to be enacted from outside. The market for corporate control, often referred to as the takeover market, is expected to serve this purpose to ensure long-term shareholder wealth maximization through takeover or other actions as appropriate.
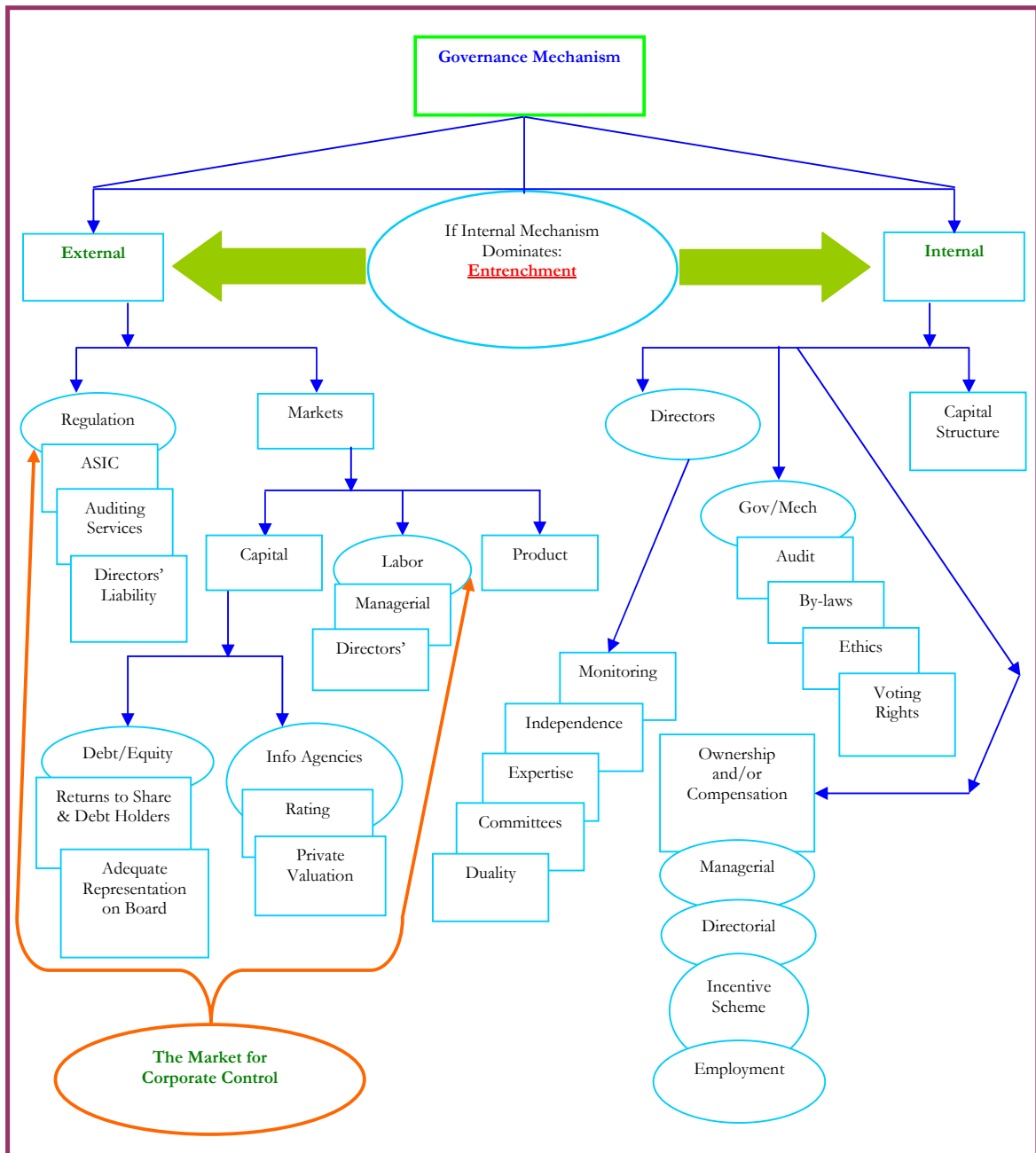
2.2.3   The Takeover Market

Manne (1965) argues that if a company is poorly managed, the market price will decrease relative to the shares of other companies in the same industry. An immediate effect of this phenomenon is the possibility of takeover attempts. The lower the stock price, the more attractive the takeover becomes for those who are confident of managing the company more efficiently. As a result, the future return from the successful takeover of a poorly run company can be very high. Takeovers, thus, serve as an external control mechanism in that they limit major managerial opportunistic behaviour by taking over the firm. However, the threat of takeovers may not ensure complete coherence between managerial actions and value maximization. Nonetheless, the inability of market for corporate control in disciplining the opportunist managers does not imply that managerial inefficiencies are prevalent in modern corporations since there are other mechanisms as well (Jensen and Meckling, 1976). Usually, takeovers are done through merger, tender offer, proxy contest or involving all of these three elements. Generally, the bidding firm offers to buy the target common stocks at a price higher than its market value. Mergers take place when there are negotiations with the target managers, subject to the approval of the target's board of directors and shareholders. In a tender offer, offers are made directly to target shareholders for sale to the bidding firm. In a proxy contest, an insurgent group led by some dissatisfied former manager or shareholder group or any other group in the market, challenges to gain controlling interest on the board of directors (Jensen and Ruback, 1983). Grossman and Hart (1980) and Shleifer and Vishny (1986) argue that takeovers are attempts to replace inefficient managers. On the other hand, Jensen (1986) and Griffin and Wiggins (1992) believe that takeovers arise to remove opportunist managers and are designed to restrain managers from squandering the excess cash flow.

In effect, one of the greatest benefits of a successful takeover is the managerial efficiency because a takeover provides assurance of competitive efficiency among managers and creates strong protection for the minority, non-controlling shareholders. In addition, an efficient market for corporate control can protect capital losses through an increase in the share price because of the presence of a takeover attempt (Manne, 1965). However, one definite problem with the market for corporate control lies in its designing the methods for differentiating between mergers out of a hunt for monopoly profit and mergers motivated to establish efficient management. Nevertheless, once the theoretical aspects

of these transactions are clearly understood, this problem should not be dissipated (Malmgren, 1961).

Theories related to managerial behaviour have a long history of disagreement. Some argue that managers have considerable discretion in corporate affairs and have sufficient incentives to use it for their own benefits. Opponents argue that such behaviour should not persist since such managers would be disciplined through competitive takeovers. However, evidence suggests that neither shareholder opposition nor a takeover threat could be able to discipline the management (Edlin and Stiglitz, 1995). Given the theoretical debates on managerial behaviour and the role of market for corporate control, going private transactions are another form of takeover created to resolve the issue (Jensen and Ruback, 1983). In a pure going private transaction, public ownership of the stocks is replaced by privately owned equity and the company is delisted from the public market. In leveraged buyouts (LBOs), another form of going private transaction, replacement of public ownership by privately owned equity is done through debt financing. The immediate gains from going private are due to savings of registration and other public ownership expenses, and improved incentives for the management team under private ownership (Jensen and Ruback, 1983).

2.2.4 Going Private Transactions

Jensen (1989, pp. 1) says the following about going private transactions, "the publicly held companies, the main engine for economic progress for a century, have outlived its usefulness in many sectors of the economy and are being eclipsed". Jensen (1989) explains that new organizations are taking the place of public corporations. Their primary owners are large institutions and entrepreneurs who appoint agents to manage and monitor on their behalf and bind them with large equity interests. By resolving the conflict between owners and managers over the control of corporate resources, these new investors make significant gains in operating efficiency, employee productivity and shareholder value. The efficient resolution of agency conflict by these organizations explains how they can motivate and manage the same resources to perform much more effectively than publicly held corporations. Takeovers, corporate restructuring, divisional spinoffs, LBOs and going private transactions are the most visible actions of these organizations. As noted by Jensen (1989), these transactions have inspired criticisms from many business leaders and government officials who have called for legislative and

regulatory restrictions. Going private transactions, often referred to as the PTP transactions, take place when a publicly quoted company is taken over by privately owned equity investments, the target company goes private and is delisted from the stock market (Frankfurter and Gunay, 1992). Most of these transactions are financed by borrowing substantially, thus are often referred to as LBOs. Effectively, LBOs include not only PTP transactions but also private firms that are bought out with an increased position in leverage (Jensen, 1988). The majority of PTP transactions are management-led transactions. If the incumbent management team takes over the firm, the transaction is called a management buy-out (MBOs). If an outside management team acquires the firm and takes it private, then it is referred to as a management buy-in (MBIs). If the new owners of a delisted firm are solely institutional investors or private equity firms, those are sometimes referred to as institutional buyouts (IBOs) (Renneboog and Simons, 2005). Figure 2.2 shows the growth in PTP transactions globally during the period from 1970 to 2007.

Figure 2.2: Global PTP Deals over Time

Figure shows the growth of PTP deals globally over time from 1970 to 2007 by all types of PTPs. Total number of deals as recorded by the source mentioned is 21,370 globally. It is apparent from the figure that PTP deals are experiencing an increased trend from 1970, until they had a little decrease during the year 2006 and 2007 (Data Source: Stromberg, 2007).

	1970-1984	1985-1989	1990-1994	1995-1999	2000-2002	2003-2005	2006-2007
No. of Deals	204	662	1158	4661	4135	6132	4418
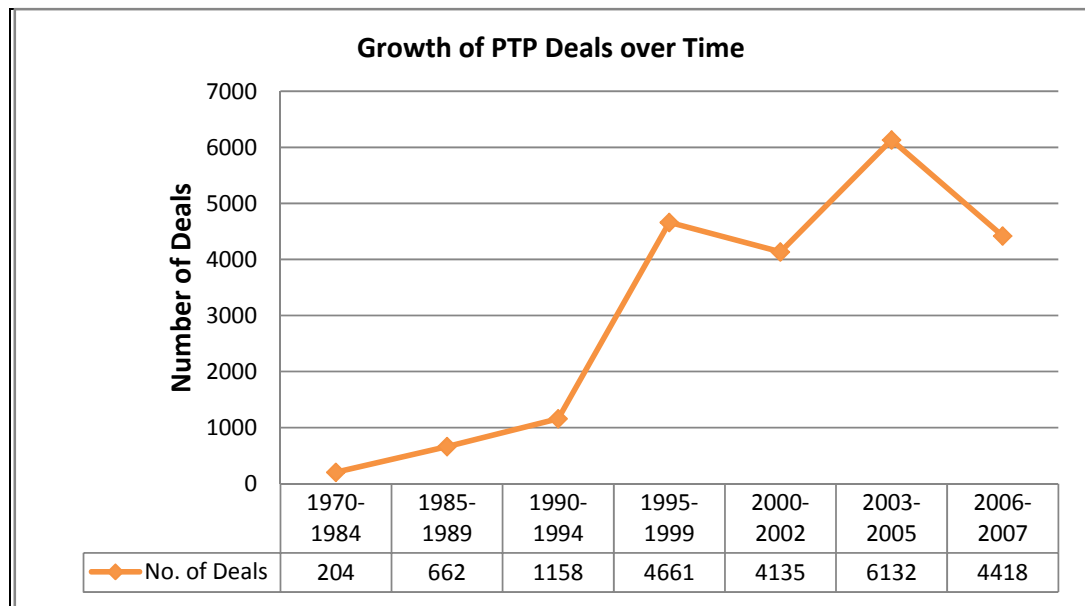
During the 1980s, a huge number of public companies went private through LBOs. The reason behind this, as argued by Bharath and Dittmar (2010), is the development of the

junk bond market. After a lull in the 1990s, going-private transactions increased with the development of the PE market after the 2000s. During the 1990s and since, there have been improvements in corporate governance structures and active monitoring and this was expected to reduce the need for such organizational restructuring (Holmstrom and Kaplan 2001). Mehran and Peristiani (2010) argue that the incentive to reduce agency conflicts and to remove information asymmetries between managers and shareholders have been the root causes for going private transactions. In addition, public firms with less financial visibility are more likely to undertake PTP transactions. Other explanations for going-private transactions include the elimination of widespread publicly traded ownership and the elimination of listing costs which arise from being listed in a public market (Jensen, 1986). Going-private may also occur as a form of takeover defense (Eddy *et al.* 1996). However, the literature indicates that different factors drive PTPs in different countries having different institutional arrangements (Weir *et al.* 2005a). Empirical evidence on post-operating performance of companies taken over through LBOs is largely positive. For US PTP deals in 1980s, Kaplan (1989) found that the ratio of operating income to sales increased by ten to twenty percent. Lichtenberg and Siegel (1990) found that LBOs experience significant increases in total factor productivity after a buyout. In a more recent PTP buyout study, Guo *et al.* (2011) found modest increases in operating and cash flow margins that are much smaller than those found in the 1980s in the US. Acharya and Kehoe (2010) and Weir *et al.* (2007) found similarly modest operating improvements for PTP deals in the UK during the same period. Overall, the empirical evidence is largely in support of the presence of operating and productivity improvements after the firm is actually taken private.

Lowenstein (1985) concludes that going private transactions eliminate asymmetric information and thereby remove undervaluation. As a result, the presence of information asymmetries may provide incentives for managers to manipulate information to lower the value of the firm before they take their firm private. Specifically, as suggested by Bharat and Dittmar (2010), firms will be prone to go private if the market incorrectly values their prospect with less analyst coverage. Merton (1987) notes the same evidence by arguing that the benefit of being public is diminished with lower investor recognition. In addition, studies on going private transactions suggest that PTPs increase efficiency with the presence of higher debt and alignment of the management incentives by increased ownership stakes (Jensen 1986). Thus, an important explanation for going

private is to improve the incentive alignment and governance structure of the firm. In addition, most PE transactions enable management to transfer wealth from bondholders to equity holders (Asquith and Wizmann, 1990).

2.2.5 Private Equity Transactions

A private equity firm is usually organized as a partnership or limited liability corporation (Kaplan and Stromberg, 2009). Jensen (1989) described these firms as decentralized organizations with relatively few investment professionals who raise equity capital through private equity funds. In its legal form, private equity firms are organized as limited partners and general partners. The general partners manage the firm and limited partners provide most of the capital. The limited partners may include institutional investors and, in some cases, wealthy individuals. The private equity firm usually serves as the firm's general partner. The general partner is compensated in three ways. First, the general partner earns a management fee as a percentage of the equity provided plus a percentage of equity employed on realized investments. Second, the general partner earns a share of the profits of the firm. Finally, some general partners may charge dealing and monitoring fees. The private equity firm buys majority control of an existing or mature firm using a relatively small portion of equity and a large portion of outside debt financing, sometimes as large as ninety percent (Kaplan and Stromberg, 2009). On this basis, PE firms are generally referred to as LBO investment firms in academic literature. As LBO activity increased after the 1980s, Jensen (1989) argues that PE firm has concentrated ownership stakes with high-powered incentives for management at low overhead costs. PE firms apply performance-based managerial compensation, highly leveraged capital structure and active governance. Despite some incidents of default and bankruptcy during the later 1980s and early 1990s, PE firms have continued their LBO transactions until now. In 2006 and 2007, a record amount of capital was committed internationally to LBO transactions through private equity firms (Kaplan and Stromberg, 2009).

Typically, a PE deal is organized as shown in Figure 2.3 below. The parties involved in a PE transaction are the PE firm, the target company, the shareholders and management of the target company and the financial institution that lends required money. The key participants in such a deal are the PE firm that invests in the transaction and the banks who lend in support of the deal and their respective advisers. The bid is made by a

newly-formed company, usually referred to as 'Newco'. On the other side of the transaction, are the shareholders who are seeking to maximize their capital gain (Gilligan and Wright, 2010).

Figure 2.3: Organizational Structure of PE Deal

This Figure shows the way PE deals are organized. It includes the actors who play the crucial role in the successful completion of a PE deal. 'Newco' is the newly formed company on behalf of which a bid is made to acquire an existing pubic company (Source: Gilligan and Wright, 2010, pp. 2).
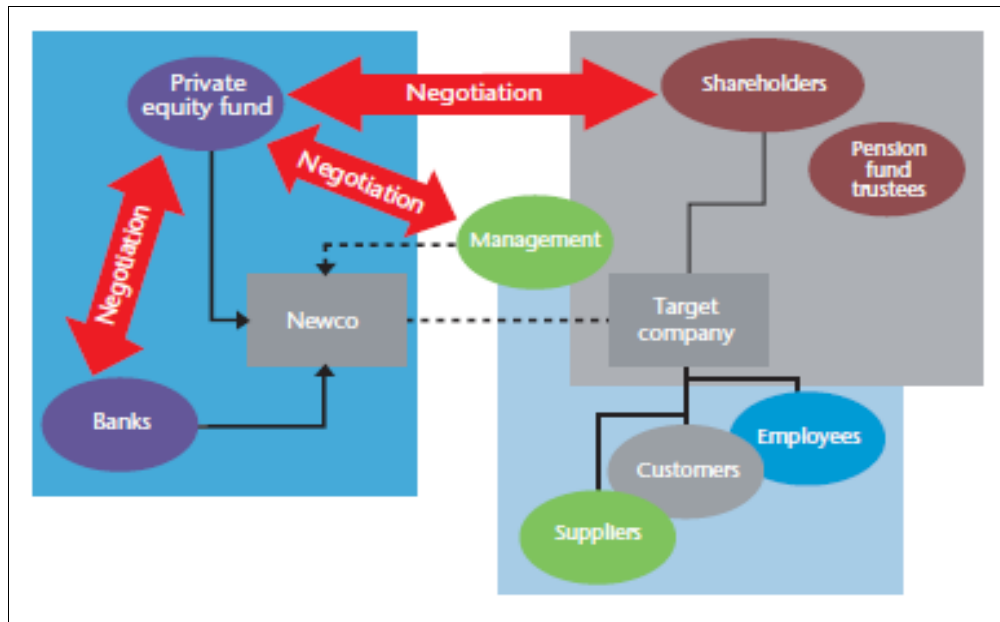
Typically, PE firms offer the management team a large equity stakes through stocks and options (Jensen and Murphy, 1990). PE firms also require management to make a meaningful investment in the company; these equity stakes are expected to reduce management's incentive to manipulate performance (Kaplan, 1989). Moreover, leverage creates pressure on managers to make interest and principal payments (Kaplan and Stromberg, 2009). This pressure reduces the 'free cash flow' problems as described by Jensen (1986), in which management with weak corporate governance could dissipate excess cash flows. Also, Axelson *et al.* (2009) argue that leverage provides discipline to the acquiring LBO fund. In addition, PE firms control the boards of their portfolio companies and are actively involved in their internal governance structure (Gertner and Kaplan, 1996; Acharya and Kehoe, 2010; Cornelli and Karakas, 2008) thereby creating a more transparent and operationally efficient internal governance structure.

Figure 2.4 below, shows the value of worldwide LBO transactions backed by PE firms during the period between 1985 and 2007. It is evident that the transaction values peaked in 1988, dropped during the early 1990s and rose and peaked in the later 1990s until recently. From 2005 through June 2007, record buyout transactions occurred at a combined estimated enterprise value of over $1.6 trillion (in 2007 dollars), accounting for around thirty percent of the total transactions that occurred during the period of 1985 to 2007 (Kaplan and Stromberg, 2009). Figure 2.5 shows the growth of Global PE deals in number over time from the period 1985 to 2007. A total of 17,171 PE backed buyout transactions occurred during this period with a record 5,188 buyout transactions occurring within 2005 and 2007.

Figure 2.4: Global PE Deals in Value

Figure depicts the increase in global PE deals in value over time. Transaction values are calculated as Enterprise value of the Target Firms = Market value of equity + Book value of debt – Cash. The values are then converted into 2007 US dollars (Data Source: Kaplan and Stromberg, 2009).

	1985 - 1989	1990 - 1994	1995 - 1999	2000 - 2004	2005 - 2007
value in Millions of 2007 US$	257,214	148,614	553,852	1,055,070	1,563,250
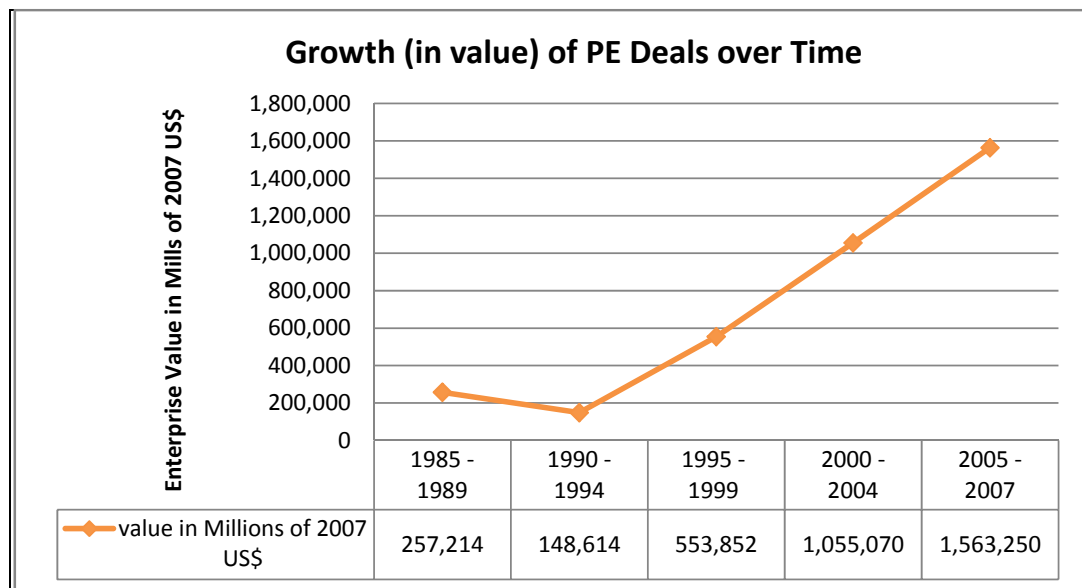
A considerable increase in PE takeovers through LBOs in the 1980s is an indication that these transactions are a significant tool for corporate restructuring. PE firms and buyout specialists extracted value through reorganization of the slow-growth public firms into more efficient private companies (Mehran and Peristiani, 2010). PE firms use their industry and operating knowledge to identify attractive investments and create value for

those investments. They consider the issue of cost-reducing opportunities, acquisition opportunities, as well as management changes and upgrades (Acharya and Kehoe, 2010; Gadiesh and MacArthur, 2008). Cumming *et al.* (2007) conclude that PE takeovers enhance performance and have a profound effect on work practices. Interestingly, as Mehran and Peristiani (2010) point out, the decision to go private through PE takeovers lies in the hands of insiders and managers seeking a more efficient corporate structure and better value for their company.

Figure 2.5: Global PE Deals in Number

Figure depicts the increase in global PE deals in number over time. 2005 and 2007 experienced most number of PE deals worldwide. (Data Source: Kaplan and Stromberg, 2009).

	1985 - 1989	1990 - 1994	1995 - 1999	2000 - 2004	2005 - 2007
PE Deals	642	1123	4348	5673	5188
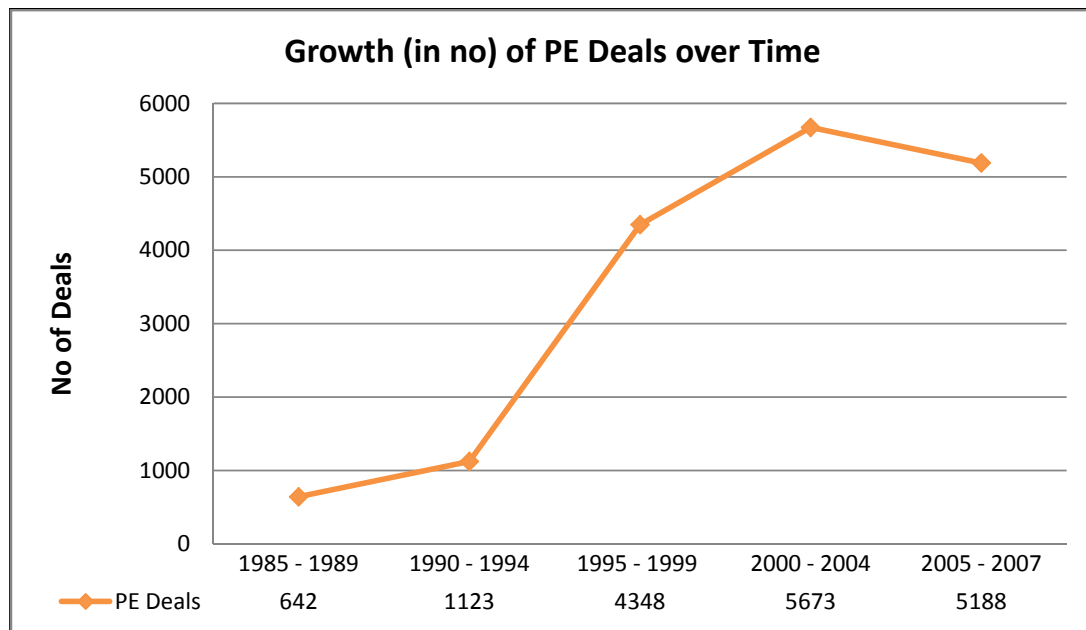
Table 2.1 shows the distribution of global PE transactions by region. The US and Canada constitute the major portion of PE transactions worldwide. The increased expansion in PE markets from 2005 to 2007 (evident from Figures 2.4 and 2.5) might have many different reasons. This might be the picture that Jensen (1989) described as the fact that LBO organizations would eventually dominate the corporate organizational form. PTPs grew rapidly in numbers and size and spreads to some new regions of the world (Kaplan and Stromberg, 2009). Like other developed economics, Australia also experienced a steady increase in LBOs after the year 2000s.

Table 2.1: Distribution of Global PE Deals by Region

Table 2.1 shows the distribution of PE deals by world region from 1985 to 2007. US and Canada experienced most number of PE deals. The value of Australian PE deals is very low in comparison to the other developed region of the world. However, there is an increasing trend in Australian PE deals (Data Source: Kaplan and Stromberg, 2009).

Region of the World	% of Enterprise Value in PE Deals over Time				
	1985-1989	1990-1994	1995-1999	2000-2004	2005-2007
USA and Canada	87%	72%	60%	44%	47%
United Kingdom	7%	13%	16%	17%	15%
Western Europe (except UK)	3%	13%	20%	32%	26%
Asia and Australia	3%	1%	2%	4%	4%
Rest of the World	0%	2%	2%	2%	3%

2.2.6 Private Equity Transactions in Australia

As stated by Westcott (2009, pp. 1 – 3), "Over a decade and a half after Jensen (1989) predicted the eclipse of the public corporation, Jensen's 'active' investors surfaced publicly in Australia…….the growth in PE as an asset class, particularly the increasing media attention gained by private equity investors, has arguably piqued an increased interest". Thus the relationship between ownership and PE investment has long been a source of finance for companies in Australia, for the venture capitalist in particular. However, the direct intervention of PE investment, in terms of the volume of transactions, has increased to a considerable extent during recent times. Some of the companies acquired and targeted by PE firms are not necessarily under-performers. Targeting of companies like Qantas by PE investors reveals the fact that PE investors are determined to increase efficiency of firm operations (Westcott, 2009). The central voice of the Australian PE Industry, the AVCAL suggests that there are at least five important factors that make a PE investment highly efficient in the value addition process, as noted by Chapple *et al.* (2010). These five factors are alignment of managers and outside shareholders, long-term value creation, detailed due diligence, appropriate planning for the future investment and an active stewardship in value addition.

The PE industry attracted considerable attention in Australia with the attempt by APA to purchase Qantas in November 2006. Originally, Qantas was a wholly government-owned company and was privatized in the first half of the 1990s. Over a six month period between the initial announcement and the eventual failure of the bid, the PE industry

sector came under major scrutiny from the press and politicians. Although the Qantas bid failed, the impact of PE transactions in Australia remains significant (Westcott, 2009). According to Ernst and Young (2010), during the last ten years Australia/New Zealand PE investment grew their annual profit on an average by a thirty six percent, as compared to only eleven percent for equivalent public companies. Among the three largest PE backed Initial Public Offerings (IPO) globally, the largest was the floatation of Myer Holdings equivalent to US$ 1.9 billion on the ASX (AVCAL, 2010). Although PE investment still accounts for a small proportion of Australia's capital market funding, the extent of PE transactions has increased since the 2000s; while these investments are small in number, the value of these transactions went up considerably during the decade (Westcott, 2009). Consistent with this, Farrell (2007) notes that the influence of PE investment is larger than its size suggests.

During the last decade, the PE transactions in Australia experienced a remarkable growth. In the year 2006 alone, value of PE transactions reached to AUD$ 26 billion, whereas it averaged AUD$ 10 billion in the preceding five years (see Figure 2.6). Given that PE bidders can make a significant economic contribution to the Australian capital market with a persistent increase in their investment, the role of PE transactions in the market has attracted recent attention (Chapple *et al.* 2010). It is important to note, also, that the number of companies listed on the ASX is low compared to that in other developed market economies. Concentration of market capitalization value among some of the biggest firms, together with a small population, limits the operational efficiency of managers and directors. Therefore, traditional monitoring mechanisms might be less effective in Australia (Henry, 2010).

2.3 Institutional Set-up in Australia

An important feature of the Australian capital market is the high level of investment from the household sector in publicly listed companies. Hill (2010) reports that around 6.7 million people, 41 percent of Australians, own shares either directly or indirectly. The proportion of shareholding by institutional investors is somewhat lower than that found in the US and in the UK (Hill, 2010). As a result, capital market regulations form an important part in the smooth functioning of these markets. Takeover activity in Australia is controlled through the regulations laid down in Chapter 6 (Takeovers) of the Corporations Act (CA), 2001. Other legislation such as the Trade Practices Act, the

Foreign Acquisitions and Takeovers Act and the Listing Rules of the ASX are also prevalent in regulating takeover bids made for Australian companies. Farrer (1997) and Mayanja (1999) mention the inadequacy of the current takeover legislation form in Australia and put forward proposals to reform rules guiding takeover actions and directors' responsibility laws within corporation's legislation. These reform proposals are based on the premise that takeovers are value-creating transactions (Henry, 2005; CA, 2001). In addition, non-binding codes of practice and guidelines also form a part of the regulatory atmosphere. The ASX Good Governance Principles and Best Practice Recommendations fall within this category. The ASX has adopted a flexible and non-prescriptive regulatory approach, meaning that listed companies are allowed to deviate, but with an appropriate explanation justifying the deviations. Shareholder practice guidelines, such as those issued by the Australian Council of Superannuation Investors (ACSI) and the Investment and Financial Services Association (IFSA) also have been influential sources of governance standards in Australia (Hill, 2010).

Figure 2.6: Australian PE Investment (in value) over Time

This Figure shows the growth of PE investment over the last decade in Australia. Australia also has a peak in PE deals during 2005 to 2007 as it happens globally (see Figure 2.4) (Data Source: AVCAL, 2010).

Growth of PE Investment in Australia

	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010
Amount (AU$m)	1,219.	1,224.	805.46	611.32	1,520.	2,141.	2,152.	2,610.	1,922.	2,183.
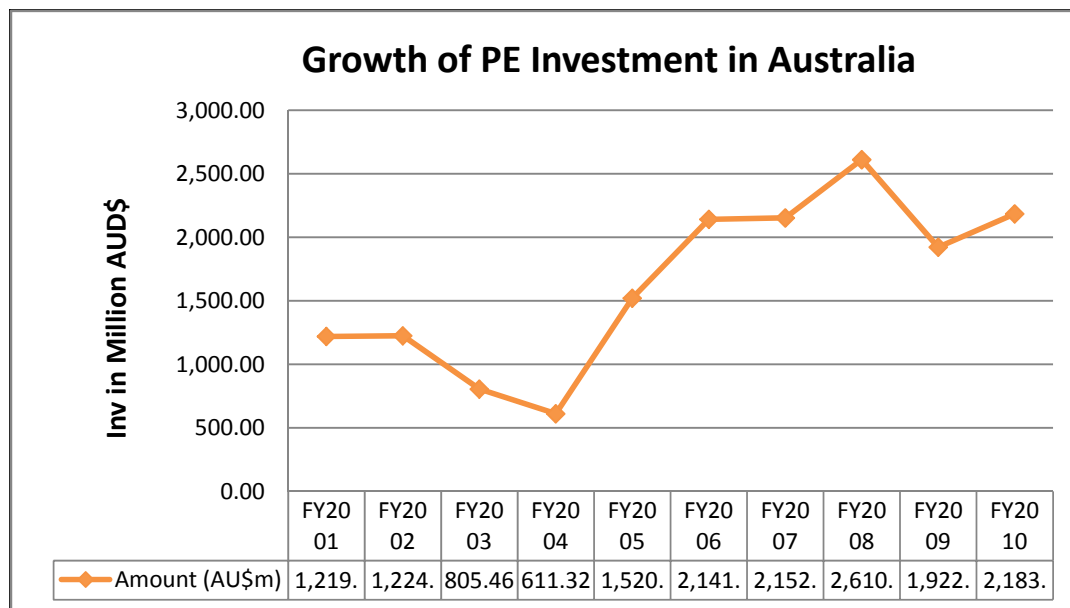
The duties and responsibilities of company directors as officers of the company are less authoritatively stated in Australia, and there are no specific regulations that exist to specify the actions or responsibilities of directors in response to takeover bid

announcements (Henry, 2005). Section 180(1) of CA (2001) states that directors are required to "discharge their duties with degree of care and diligence that a reasonable person would exercise". In addition, Section 180(3) explains this duty as a "business judgment" rule in determining if decisions are made in the best interests of the company. Also, in the case of takeover circumstances, there are no guidelines existing in the Legislation regarding the legal responsibilities or requirements of target directors in response to takeover bids. However, information is required to be disclosed in the target company's Part B or Part D response statement (Henry, 2005). Section 638(1) of CA (2001) requires the target Part B or D statement to contain "all information that holders . . . would reasonably require to make an informed assessment of whether to accept the offer under the bid". Section 638(3) also requires the target response to contain a separate statement by each director with regard to their recommendation on accepting or rejecting a bid including the reasons for their recommendation. The target statement is also required to include details regarding the directors' shareholdings in the target company and their own intention regarding the bid. All this information is to be sent to target shareholders, the bidding company and the Australian Securities and Investment Commission (ASIC) within fourteen days of the takeover announcement (CA, 2001; Henry, 2005).

In recent times, there has been a growing emphasis to develop good governance practices around the world to limit agency conflicts (Henry, 2004). During the last decade, Australia has experienced a number of major corporate governance scandals which have had a significant effect on corporate law reform and enforcement (Hill, 2005 & 2010). The corporate governance best practice recommendations are only in preliminary stage in Australia. The CGC released a set of 'Principles of Good Governance and Best Practice Recommendations' only in March 2003, and the recommendations became observable first in the 2004 corporate reporting year. It is argued that the adoption of the Cadbury Committee recommendations by UK companies has resulted in more independent boards, which are thought to prioritize shareholders' interests (Henry, 2005). The main objectives of these recommendations include improving the independence and integrity of the directors of listed companies through majority representation by independent outside directors, creating independent nomination, remuneration and audit committees, reducing Chief Executive Officer (CEO)-Chair duality and linking the remuneration structure closely with performance. Henry (2005)

argues that good governance practices have been prevalent in larger listed companies in Australia because larger companies are subject to more analysts following and monitoring their performance, which has ensured a greater level of transparency. On the other hand, many of the smaller companies have sub-optimal governance structures and they commonly become takeover targets. In the absence of a good governance structure, the outcome of takeover bids may be dependent on the self-serving behaviour by insiders. Self-serving behaviours may encourage managers to resist value-creating takeover bids. Alternatively, self-serving behaviour also may encourage managers to take their firm private where they have substantial benefits in doing so (Henry, 2004). With the present condition, Australian corporate governance, particularly in the smaller companies, is less likely to meet best-practice models in near future as argued by Henry (2004).

Hill (2010) argues that the level of legal actions against directors and officers in Australia has been very low. A number of developments over the last few decades have strengthened the accountability in the regulatory environment in Australia. Reforms in 2004 granted ASIC the authority to issue infringement notices for lack of compliance. In recent times, ASIC has launched high level enforcement actions under the civil penalty regime, many of which are related to some well-known Australian corporate scandals. Moreover, the corporate governance recommendations have been under constant scrutiny since their inception in 2003, and a revised second edition was released in 2007. In April 2010, the ASX released a further proposal for amendments to the guidelines relating to a number of issues including board diversity. At the same time, the ASX also released a draft amendment to its Listing Rules relating to remuneration committees and a company's trading policies. With all these changes and developments being made in the Australian regulatory environment, it is expected that the CGC Recommendations will be able to improve the overall corporate governance practices in Australia (Hill, 2010).

2.4.1 Empirical Evidence on Going Private Transactions

As Jensen (1989) expected, LBOs have become an increasingly important corporate organizational form over the course of time. With better corporate governance practice, concentrated ownership by active owners, strong managerial incentives and efficient capital structure, the LBO organizational form appears superior to that of the public corporation where there are disperse shareholders and weak governance. Weir and

Wright (2006) report that PTPs have lower valuations than do other traditional acquisition forms of listed corporations; this suggests the existence of managerial private information in firms going private.

The literature on PTP and PE transactions has various aspects. One of which deals with free cash flow and argues that agency costs are prevalent in firms going private (Jensen, 1986). Firms going private are expected to have high free cash flows which are being used to achieve managerial objectives rather than shareholder wealth maximization (Weir *et al.* 2005a). Supporting this notion, Lehn and Poulsen (1989) and Singh (1990) find that firms going private have greater free cash flows. Another aspect deals with the market for corporate control, based on the idea that takeover bids are disciplinary and hostile. If PTP firms had been the subject of takeover speculation whilst publicly quoted, they are likely to have ineffective internal governance mechanisms. A number of studies (Lehn and Poulsen, 1989; Singh, 1990; Halpern *et al.* 1999) also report that companies going private are more likely to experience takeover speculation than firms that did not. Below an overview of the extant literature that is relevant to the present study is presented:

Maupin *et al.* (1984) examine the differences between pre-existing characteristics of companies going private through MBOs and firms taken over but which remain publicly quoted. The study compares 63 US firms with a matched sample between the period 1972 and 1983. They find that firms going private through MBOs possess some financial and stock market characteristics that are significantly different from those that do not go private. The analysis shows that going private firms are more likely to have high level of share ownership by managers and directors and a higher level of cash flow to net worth ratio and low market prices for their stocks. A similar study is conducted by Maupin (1987) having a slightly larger sample from the US between 1972 and 1984. Using a sample of 97 going private firms and comparing them with a matched sample of traditional takeover firms, the study shows similar results to those of by Maupin *et al.* (1984). Thereafter, Malone (1989) studies the characteristics of smaller LBO transactions of 56 US firms between 1981 and 1987. Malone (1989) concludes that management equity stake plays an important role in the changes that may occur within firms after the buyout has taken place.

Lehn and Poulsen (1989) investigate the source of stockholder gains in going private transactions using a sample of 263 US going private transactions from 1980 through 1987. They compare the going private firms with a matched sample and find support for the hypothesis advanced by Jensen (1986) that a major source of PTP gains is the elimination of agency problems associated with free cash flow. They also find that their results become strongest when managers are confronted with a hostile takeover threat. The results of their study are especially interesting since they find strong evidence that managers of the firms going private own relatively little equity before the transaction. This finding is in contrast to the results reported by Maupin *et al.* (1984) and Maupin (1987).

Kosedag and Lane (2002) examine the applicability of the free cash flow hypothesis and the tax savings hypothesis to re-LBOs: the practice of going private via LBO, re-obtaining public status through a new IPO and then going private for the second time. Kosedag and Lane (2002) argue that if Jensen's (1986) free cash flow hypothesis works as an explanation for going private in general, then the same perception should also hold for a second LBO. Using a sample of 21 US re-LBO firms during the period from 1980 to 1996 and comparing them with a control sample, Kosedag and Lane (2002) do not find any evidence that going private is strongly related to free cash flow.

Using a survey to collect data on pre and post-LBO goals, strategy, structure and productivity for a sample of 214 US going private firms between 1986 and 1989, Phan and Hill (1995) report evidence that LBOs are associated with an increase in management equity holdings. They note that the increase in management shareholdings is correlated with substantive changes in strategy and structure ex-post. Phan and Hill (1995) believe debt might play an important role; however, management equity stakes might have the most lasting impact upon firm efficiency. They conclude that LBOs may be used to transfer wealth from outside shareholders and bondholders to the senior managers.

The studies by Maupin *et al.* (1984) and Maupin (1987) are extended by Singh (1990), who investigates distinguishing characteristics of firms engaged in MBOs and incorporates the prior context of the firm before going private. Singh (1990) uses a sample of 65 US MBOs in the period between 1980 and 1987 and compares them with

130 non-going private firms. The results of the study add new evidence to the literature by showing that firms undergoing buyouts have higher levels of liquidity and have a significantly higher incidence of takeover speculation prior to the buyout.

Green (1992) studies owner-managers' perceptions in eight UK MBOs between 1980 and early 1990 and investigates the strategic implications of the highly leveraged, management based ownership structure in MBOs and brings new insight to the literature by saying that managers may have motivations to transfer the firms' ownership to the personal form for efficiency reason. The study is a case-based qualitative analysis utilizing interviews with owner-managers of MBOs. It reveals that owner-managers generally interpreted owner-control and debt-control as enhancing managerial motivation and improving efficiency. One of the impending views of the study is that a part of any efficiency gains resulting from a transfer to personal ownership occurs because inefficient control is removed. Thus, buyout ownership allows managers to perform tasks more effectively through greater independence to take decisions and formulate strategies.

Halpern *et al.* (1999) argue that the LBO population is heterogeneous. They examine the characteristics of 126 US LBOs during the period from 1981 to 1986. The study employs three different types of samples, namely, an LBO sample, a sample of firms that remained public and not acquired and, finally, a sample of firms acquired by another public corporation. Using cluster analysis and a multinomial logistic regression model, they argue that there are two types of poorly performing firms going private through LBOs. The first group, in which management has a small shareholding, faces takeover pressures that force management to consider a buyout of the firm or be subject to hostile takeover. The second group is characterized by much higher management shareholdings and, as such, do not face external takeover pressure. However, with large and undiversified portfolio holdings, management might have an incentive to take cash out of their firm by taking it private. The main attribute of this study is not to show the impact of managerial ownership on the going private decision but it does provide insight that high managerial ownership can play an important role in going private. In that respect, Halpern *et al.* (1999) support the evidence forwarded by Maupin *et al.* (1984), Maupin (1987) and Phan and Hill (1995).

Opler and Titman (1993) build upon Jensen (1986) and Lehn and Poulsen (1989) study on the free cash flow hypothesis and investigate the determinants of LBO activity by comparing firms that have implemented LBOs to those that have not. Using a sample of 180 US firms that undertook LBOs in the 1980 to 1990 period, they suggest that going private firms can be characterized as having a combination of unfavorable investment opportunities, in terms of low Tobin's Q and relatively high free cash flow. Further, Opler and Titman (1993) added new evidence to the literature by examining the effect of financial distress cost on LBOs. They do not find any evidence that firms with high expected costs of financial distress are likely candidates of LBO.

Weir *et al.* (2005a) bring a new dimension to the largely exploratory extant research into characteristics of going private decisions by investigating three important aspects of governance mechanism. They examine the extent to which the going private decision is influenced by incentive effects, internal monitoring mechanism and external monitoring mechanism. Employing the multivariate logistic regression model and using 95 UK PTP firms during 1998 to 2000, including a control sample of the same number, the study reveals that firms going private have higher CEO shareholdings and have more CEO-Chair duality; but no effect is found in respect of the board independence and excess free cash flow. In addition, no evidence is found that firms going private experience a greater threat of hostile acquisition from outside. The results, thus, provide support for the incentive and internal monitoring explanations for undertaking a PTP transaction. Moreover, the probability of going private shows that incentive effects are stronger than the monitoring effects. Weir *et al.* (2005a) believe that, in the context of increasing globalization, PTP firms might be too small to become an attractive target for the corporate buyer and hence do not face much pressure from the market for corporate control. The significance of CEO shareholdings in this study is consistent with the evidence suggested by Maupin *et al.* (1984), Maupin (1987), Phan and Hill (1995) and Halpern *et al.* (1999). Using the same sample set within the same time period, Weir *et al.* (2005b) conduct another study that analyses the valuation, agency costs and ownership characteristics of UK firms going private and compares them with a set of control firms. The study reveals that firms going private suffer from undervaluation indicating the fact that management of going private firms has private information. In contrast to Lehn and Poulsen (1989), this study does not find any evidence that pressure from the market for corporate control plays any role in going private. The evidence, however, suggests the

existence of financial incentives in going private through higher share ownership by the board members of the firms going private.

Weir and Wright (2006) conduct another study using the same UK PTP sample and a larger Non-PTP sample within the same time period. They evaluate the extent to which firms going private have specific external and internal governance and monitoring characteristics that differ from traditional acquisitions of listed corporations. The results of the study, consistent with the evidence found by Weir *et al.* (2005a and 2005b), support the argument for non-disciplinary takeovers. They suggest that PTPS are not exposed to takeover pressure from the market for corporate control in the form of takeover speculation as well as hostile threats. They present evidence that PTPs are likely to have higher board ownership, CEO-Chair duality, low growth prospects and lower valuations. Moreover, the results suggest that going private might be an outcome of management having private information about the company's future prospects.

Renneboog *et al.* (2007) analyse a large PE backed UK PTP sample consisting of 177 firms between 1997 and 2003 to examine the magnitude and sources of the expected shareholder gains in PTPs. The study identifies a positive relation between undervaluation and the expected shareholder gains at the PTP transaction. The study does not find any evidence of the existence of high free cash flow as predicted by Jensen (1989). These results are consistent with early UK studies by Weir *et al.* (2005a and 2005b) and Weir and Wright (2006).

Fidrmuc *et al.* (2007) examine whether PE investors take firms private for different reasons than other going private transactions. This is an important study in corporate governance literature that explores the distinguishing features of PE takeovers in compared to the other buyout transaction firms. The study is built on the heterogeneity hypothesis as suggested by Halpern *et al.* (1999) and highlights the involvement of PE funds in going private transactions. Fidrmuc *et al.* (2007) use a sample of 212 UK going private transactions covering a period between 1997 and 2003 and compare them to 200 randomly selected UK firms that remained public. The sample of 212 going private transactions consisted of 90 PE backed deals and 122 of other going private deals. The empirical results of the study provide evidence, consistent with Halpern *et al.* (1999), that the population of going private firms is heterogeneous. They show that PTPs not

backed by PE deals are significantly undervalued, not followed by analysts, have relatively high free cash and have high executive ownership. But PE deals, in contrast, have high executive ownership, but with low levels of cash, low debt levels and high dividend payments. These results suggest that Jensen's (1989) cash rich hypothesis does not apply to PE backed deals and the target firms in PE deals seemed to be short of cash. The idea, then, is that the PE firms might provide these firms with the necessary financing and other efficiency gains for their strategic restructuring.

Florackis and Ozkan (2009a) empirically investigate the relationship between managerial entrenchment and agency costs for a large sample of UK firms over the period 1999 – 2005. The study develops a managerial entrenchment index to capture the extent to which managers have the ability to expropriate wealth from shareholders. Based on a dynamic panel data analysis, the study shows strong evidence that internal corporate governance mechanisms, ownership and board structures, and managerial compensation play an important role in determining the extent of managerial entrenchment. Moreover, the analysis suggests that higher managerial entrenchment leads to greater agency costs. These finding are also robust to alternative definitions of agency costs and managerial entrenchment. Florackis and Ozkan (2009b) conduct another study to investigate the effect of managerial incentives and corporate governance on capital structure using a large sample of UK firms during the period between 1999 and 2004. The analysis reveals evidence of a significant non-monotonic relationship between executive ownership and leverage. The results also suggest that corporate governance practices have a significant impact in determining the financing mix of a firm.

Mehran and Peristiani (2010) highlight another important reason behind the decision to go private; viz., the inability of the firms to have sufficient financial visibility. They study 262 US firms (169 LBO targets and 93 non-LBO firms) that went private in the period between 1990 and 2007. They propose that an important driving force in going private is the inability to attract a critical level of analyst coverage and investor interest. The results suggest that IPO firms with low analyst coverage, low level of institutional ownership and low stock turnover are more likely to go private. Thus, it is evident that market analysts play a crucial role in getting more investor recognition and in reducing information asymmetries.

Bharath and Dittmer (2010) conduct a comprehensive study on US going private transactions to examine how firms determined the costs and benefits of being public and decide to go private through the use of PE investment. The study employs a comprehensive sample of 1,377 going-private transactions from 1980 to 2004 in the US and compares them with 6,464 IPO firms that went and remained public. Bharath and Dittmer (2010) examine firm characteristics of both the samples over their publicly listed lives to investigate how the evolution of firm characteristics impacted on the decision to go private. The results of the study suggest that the decision to go private is more prominent with firms having less information available about them in the public market and that such firms also have low institutional ownership. Also, strong evidence is found in support of high free cash flow in determining which firms go private; but this evidence is restricted to the 1980s. This is also consistent with some earlier studies (Kosedag and Lane, 2002; Weir *et al.* 2005a and 2005b) that do not find any evidence of high free cash flows as important driving factor in going private decision after 1980s.

The review of extant literature, thus, suggests specifically that the influence of asymmetric information, undervaluation, high managerial ownership and firm specific governance characteristics in going private transactions in the context of private equity takeovers has not been examined empirically. This study attempts to address this gap and is expected to bring new evidence into the corporate finance literature as applied to the Australian going private research.

2.4.2   Empirical Evidence on Going Private Transactions in Australia

Private equity investment in Australia has grown considerably and changed in nature over the past few years. Increasingly, PE firms are buying out more mature publicly listed companies. Westcot (2009) makes the case that despite the potential that going private transactions may play a different role internationality in terms of economic, legal and institutional factors, there is relatively little empirical analysis of these transactions outside the US and the UK.

Eddey *et al.* (1996) conduct the first ever study on going private transactions in Australia by investigating their determinants. The study is exploratory in nature which includes 46 Australian firms going private from 1988 through 1991 and compares those firms with a control group matched on the basis of size and industry attributes. Eddey *et al.* observe

that around ten percent of all completed Australian takeovers were going private transactions during that period and detect that increasing share ownership concentrations are the primary motive for such transactions. Although they do not find any direct support for the free cash flow hypothesis, they provide evidence that going private transactions in Australia are a response to an actual or perceived threat of a competing bid. This evidence is complemented by the fact that competing offers might work as a way to reduce potential information asymmetries between insiders and the outside shareholders.

Evans *et al.* (2005) update and extend the work of Eddey *et al.* (1996) and identify the financial and market characteristics of firms being taken private in an Australian context. They study 80 successful going private bids listed on the ASX within the period of 1990 and 1999 and compare them with a control sample of 80 traditional takeover firms matched by size and industry within the same time period. The firm characteristics examined in the study are free cash flow, growth, leverage, liquidity, managerial ownership and takeover threats. It is interesting to note that higher levels of free cash flow have not been a driving factor in going private. The results indicate that Australian going private firms are more likely to have high liquidity, low growth prospects and lower levels of leverage. Managerial ownership and takeover threats do not seem to have any impact in going private deals. Jensen's free cash flow theory (1986) does not seem to work in Australian firms. This evidence is consistent with some earlier works on US and UK firms after 1990s (Halpern *et al.* 1999; Kosedag and Lane, 2002; Weir *et al.* 2005a). Evans *et al.* (2005) believe that management of the firms may have private information that motivates them to value their firm differently to the market. Although Eddey *et al.* (1996) find takeover threats to be an important driving factor, Evans *et al.* (2005) do not find any evidence in support of this.

Chapple *et al.* (2010) conduct the first formal study into the determinants of PE bids in Australia, which they called "the beginnings of a scientific foundation for further investigation into the determinants of private equity bids in Australia" (pp. 101). They apply existing theories on motivations for going private to examine the determinants of private equity bids in Australia. The study examines a sample of 23 Australian PE targets between 2001 and 2007 against a control sample of 81 remained public firms matched by year and industry. The study provides a looming view on how PE investors choose their

targets and arrange their bids. The results indicate that PE targets have relatively greater financial slack, greater free cash flow and lower measurable growth prospects. Given that debt funding constitutes a large part of PE investment, the preferred mode of payment for private equity bidders is cash. Chapple *et al.* (2010) also suggest that PE bids would be of a friendly nature. Although exploratory in nature, the study does provide a basis on the nature of PE transactions in Australia.

Despite significant reforms having been undertaken in corporate governance mechanisms globally (Netter *et al.* 2009), LBOs and other going private transactions continue to increase their presence in capital markets around the world. The emergence of private equity is an important mechanism that captures a significant portion within the recent growth of going private transactions. The decision to go private is still controlled by insiders and managers who are looking for a more efficient corporate organizational structure and better value for their company. The incentive to mitigate agency conflicts and information asymmetries between managers and shareholders continue to influence firms' reorganization decisions (Mehran and Peristiani, 2010). Table 2.2 exhibits a chronological summary of the literature reviewed in the context of this study:

Table 2.2: Summary of the Literatures Reviewed on Agency Issue and PTPs

Authors	Region	Focus	Outcome
Maupin *et al.* 1984	US	Distinguishing features of firms going private through MBOs	High insider ownership, high cash flow to net worth and high cash flow to assets are the factors that distinguish PTPs.
Maupin, 1987	US	Distinguishing features of firms going private through MBOs	High ownership concentration, high cash flow to net worth and low P/E ratio are the factors that distinguish PTPs.
Malone, 1989	US	Characteristics of Smaller LBOs	Management ownership stake plays important role in post buy-out changes.
Lehn and Poulsen, 1989	US	Sources of stockholder gains in PTPs	A significant relationship exists between high free cash flow and the decision to go private.
Singh, 1990	US	Characteristics of firms bought out by MBOs	Firms going private have high cash flow and have a significantly higher incidence of takeover speculation prior to the buyout.
Green, 1992	UK	Owner-managers' perceptions and strategic implications of MBOs	MBOs allowed managers to perform tasks more effectively through greater independence to take decisions.
Opler and Titman, 1993	US	Motivations for LBO activities	Firms with high free cash flow and low Tobin's Q are more likely to undertake LBO.

Author	Region	Focus	Outcome
Eddey *et al.* 1996	Australia	The motivations for going private transactions	Going private transaction is frequently preceded by the threat of a takeover offer.
Halpern *et al.* 1999	US	Differential characteristics of firms going private through LBO	LBO population is heterogeneous. For firms with low managerial stake, outside takeover pressures force management to consider a buyout of the firm. For firms with high managerial stake, management has incentive to take their firm private through LBOs.
Kosedag and Lane, 2002	US	Effects of free cash flow and tax savings on re-LBOs	No evidence on free cash flow hypothesis; but tax savings still holds as an explanation for going private.
Weir *et al.* 2005a	UK	The motivations for going private transactions	Firms going private have higher CEO ownership, more CEO-Chair duality but no difference in outside directors or takeover threats compared with firms remaining public.
Weir *et al.* 2005b	UK	Valuation, agency costs and ownership structures of firms going private	Firms going private suffer from undervaluation and are found to have poor internal governance structure.
Evans *et al.* 2005	Australia	Assessing the characteristics of firms going private	Going private firms in Australia are likely to be characterized as having high liquidity, lower growth rates and low leverage.
Weir and Wright, 2006	UK	The extent to which PTPs have different governance features	PTPs are more likely to have higher board ownership, CEO-chair duality, lower growth prospects and lower valuations.
Renneboog *et al.* 2007	UK	Examined the magnitude and sources of expected shareholder gains in PTPs	The main sources of shareholder wealth gains are undervaluation of the pre-transaction target firm, increased interest tax shields and incentive realignment.
Fidrmuc *et al.* 2007	UK	The motivations for PE investors to take a firm private	The PE backed deals have high executive ownership, shortage of cash, low debt levels, and pay high dividends.
Florackis and Ozkan (2009a)	UK	The relationship between managerial entrenchment and agency cost	Internal governance mechanisms, ownership structures and managerial compensation play an important role in determining the extent of managerial entrenchment.
Florackis and Ozkan (2009b)	UK	Effect of managerial incentives and corporate governance on capital structure	Strong evidence of a significant non-monotonic relationship between executive ownership and leverage. The results also suggest that corporate governance practices have a significant impact on leverage.
Stuart and Yim, 2010	US	Effect of board network on the likelihood of being targeted in PE deals	The companies having directors with past PE experience are more likely to receive PE offers.
Chapple *et al.* 2010	Australia	The pattern of selection of target firms by PE investors	PE targets have greater financial slack, greater financial stability, greater free cash flow and lower measurable growth prospects.

Author	Region	Focus	Outcome
Mehran and Peristiani (2010)	US	Financial visibility and the decision to go private	An important driving force in going private is the inability to attract a critical level of analyst coverage and investor interest.
Bharath and Dittmar, 2010	US	To examine how firms decided to go private through the use of PE investment	The decision to go private is apparent when firms have less information available about them in the public market.

In general, the existing research on going private transactions has looked into the financial and governance characteristics of PTPs, as denoted by Evans *et al.* (2005). Most of those studies focused on LBOs, MBOs, MBIs and other dimensions of US and UK going private deals with a little attention to PE deals. In addition, Australian research on going private transactions is limited to Chapple *et al.* (2010) study. A possible reason for the lack of research in this area is the difficulty of obtaining public information on such transactions. Therefore, research on private equity is very limited in the academic literature and, in particular, in Australian going private studies. Considering the recent surge and significance of PE investments worldwide (Kaplan and Stromberg, 2009), formal studies into the nature and interplay of these investments are warranted.

As Chapple *et al.* (2010, pp. 101) said, "private equity bidders appear to occupy an unusual place in the market as disciplinary, friendly acquirers. However…the disciplinary motive for takeover activity in Australia appears to be oversold. Moreover, as private equity bidders appear not to focus on particular industries, the synergistic motive is obviously less plausible. Consequently, private equity bidders appear to play an 'opportunistic' role not readily explained by either the disciplinary or synergistic hypothesis". Jensen (2007) claims PE as a new model of corporate management; one which can be applied to many firms and organizations. He (Jensen) supports the emergence of private equity investment since it can recapture the value destroyed by agency problems, as evidenced from the recent growth and success of the private equity sector. Hence as a new form of corporate control, it is difficult to classify private equity bids in the traditional manner. Thus, with the existence of a number of studies on the financial and governance characteristics of target firms in PTP and PE transactions and a lesser number of studies on Australian PE takeovers in particular, I am not aware of any research linking the relationship among managerial private information, high managerial ownership, governance mechanisms and the likelihood of Australian firms being

involved in going private transactions through PE takeovers. Essentially, in this study the aim is to determine the significance of information asymmetry, undervaluation, incentive and monitoring mechanisms in Australian PE takeovers firms.

2.5 Chapter Summary

To date, researchers have explored various features of going private transactions worldwide. The review of literature in this chapter uncovers the research related to going private transactions and establishes a gap in the research related to private equity in the Australian context. In addition, the recent rise in private equity transactions internationally provides an impetus to conduct an in-depth empirical investigation on the nature and implications of these transactions. This chapter reveals that no studies have been conducted to investigate the link among undervaluation, incentive alignment, governance mechanisms and private equity takeovers. In this study, the importance of managerial private information and high managerial ownership have been highlighted as determinants for a public firm in a going private decision and, in particular, being taken over by a PE firm from an Australian context. Given the dynamism in PE transactions and a dearth of research in the area, this study extends prior research by using more relevant, recent and large-scale data and is expected to bring new insights into the corporate finance literature in terms of the nature and implications of PE takeovers in Australia.

CHAPTER 3

DATA SOURCES AND SAMPLE DESIGN

3.1 Introduction

This chapter describes the data sources, the sample selection process and the variables utilized in the empirical investigations throughout this thesis. The remainder of this chapter is organized as follows: Section 2 provides the details of data collection and sample selection procedures; Section 3 defines the variables used in this study; Section 4 presents the descriptive statistics and a chapter summary is presented in Section 5.

3.2 Data Sources and Sample Design

Analysis in this thesis is based on a unique hand-collected dataset. The empirical analysis covers the period from 1990 through 2010. The sample consists of all successful going private bids involving companies listed on the ASX and made between the sample period of 1 January 1990 and 31 December 2010. The firms included in the sample are categorized into two groups. The first group consists of the target firms successfully taken over by private equity firms, referred to as 'PE' firms hereafter. The second group, a matched sample, consists of target firms involved in public-to-public transactions within the same accounting year as the PE takeovers. This group is matched with PE firms by time period and industry as classified by the ASX industry classification code and is referred to as 'Non-PE' firms hereafter. Matching samples have been used in numerous studies, for example, Lehn and Poulsen (1989), Weir *et al.* (2005a and 2005b), Weir and Wright (2006). All financial and governance variables are measured by means of the balance sheet date prior to the year of the announcement of the takeover activity.

The sample was formed by utilizing a variety of databases and resources. The databases used for forming the sample are as follows:

- *SDC Platinum*

  The initial sample of all takeovers is collected from the Securities Data Corporation (SDC) Platinum ANZ M&A Database. A total of 4546 completed ASX deals are retrieved from the SDC within the sample period. From among 4546 deals, a total of

517 successful going private bids are identified initially. A screening process is then employed to finalize the observations. All successful going private bids involving an acquirer that has a status of 'Joint Venture 'or 'Subsidiaries', have been screened out of the sample to ensure that no 'Publicly' listed companies remain a part of the acquirers in the going private bids.

- *DatAnalysis*

Aspect Huntley Morning Star DatAnalysis Database is an ASX based database. The list of 'ASX Delisted Firms' within the same sample period is retrieved from DatAnalysis. The list of 'ASX Delisted Firms' is used to re-confirm all successful going private bids involving an acquirer that has a status of a 'Private' company.

- *ORBIS*

The list of PE takeovers, out of the going private bids, is then confirmed finally through the 'Deal Financing' and 'Deal History' menu of Bureau Van-Dijk ORBIS Global Database. The going private bids are considered as a PE led bid only when it was financed wholly or partly by a PE firm in Australia. After finalizing the screening process through ORBIS, a total of 178 PE led going private bids are identified within the sample period from ASX.

- *FinAnalysis*

After finalizing the observations from ORBIS, the financial data are then collected from Aspect Huntley Morning Star FinAnalysis Database for all PE target firms. Based on the availability of at least 3 years of financial data, 129 companies are finally selected as 'PE' target firms in ASX during the specified period. 49 PE target firms are screened out of the sample since they do not have complete information.

- *Annual Reports*

Once the financial data are collected from FinAnalysis, the annual reports of those 129 PE target firms have been downloaded from DatAnalysis database. Managerial ownership, institutional shareholdings and other data related to internal governance variables are then retrieved from the annual reports on a company by company basis.

- *DatAnalysis ASX Announcement Window*

The ASX announcement window of DatAnalysis database is thoroughly scrutinized to find if there was any takeover bid and/or speculation for taking over the target firms within the last 24 months of the actual takeover. This information is collected on a company-by-company basis.

Thus, the 129 observations included in the PE sample meet the following criteria as shown in Table 3.1 below:

- All transactions are to take place between 1 January 1990 and 31 December 2010 in the Australian Securities Exchange

- All transactions are to be successful going private bids

- All acquirer firms should be private companies and should not have a status of 'Joint Venture' or 'Subsidiaries'

- To be considered as a PE led bid, all transactions are to be financed, either wholly or partly, by PE firms

- All the target firms must have complete information for at least the last 3 years prior to takeover activity

A matched sample of target firms involving traditional public-to-public transactions in the ASX is then created. As mentioned earlier, the initial list of all successful non-PTP deals is collected from SDC Platinum ANZ M&A database. The matched sample also has the same number of companies, i.e., 129 target firms, in public-to-public transactions. Financial data for the firms included in the matched sample are also collected from FinAnalysis database. Finally, annual reports, of all the companies included in the matched sample, are downloaded from the DatAnalysis database. Managerial ownership and other internal governance variables related data of those 129 non-PE target firms are then retrieved from the annual reports on a company-by-company basis. In addition, information on takeover bids and/or speculations for these Non-PE firms is collected from the ASX Announcement Window through the DatAnalysis database.

Table 3.1 shows the frequency of PTP deals and the selection of PE deals in Australia. Panel A provides the frequency distribution of PTP deals in Australia in terms of number of deals. It shows that a little over eleven percent of all completed deals are PTP deals within the sample period. This is broadly consistent with Evans *et al.* (2005)'s finding that approximately ten percent of all deals in Australia are going private deals. The proportion of going private deals has grown over time to around twelve percent until 2010. Stromberg (2007) notes that, the number of PTP deals has increased considerably

since 2000. Panel A presents similar evidence for Australia with the majority of PTP deals taking place between 2001 and 2007. Panel B describes the selection procedure of PE deals out of the PTP deals in Australia within the sample period.

Table 3.1: Frequency and Sample Selection of PE Deals in Australia

Panel A: Annual Frequency of all completed Going Private Transactions

	All Non-PTP Deals		All Going Private		Only Private Equity	
Year	Number	Percent	Number	Percent	Number	Percent
1990 - 1992	171	4.24	11	2.13	0	0.00
1993 - 1995	340	8.44	34	6.58	1	0.77
1996 - 1998	462	11.47	40	7.74	5	3.88
1999 - 2001	341	8.46	51	9.86	19	14.73
2002 - 2004	777	19.29	93	17.98	33	25.58
2005 - 2007	799	19.83	133	25.73	52	40.31
2008 - 2010	1139	28.27	155	29.98	19	14.73
Total	4029	100%	517	100%	129	100%

Panel B: Private Equity Deals in Australia

		Sub-total	Total
All PTP Deals		517	
Less:	Acquirers or targets with status of 'Subsidiary' or 'Joint Venture'	95	422
Less:	Deals not financed (wholly/partly) by private equity firms	244	178
Less:	Information not available for the last 3 years	49	129
	Final Total of Private Equity deals		129

3.3 Variable Definition

The following valuation variables are used throughout the thesis:

Enterprise Value Ratio (EV): EV is used as a measure of valuation. It is measured as enterprise value at time 't' divided by enterprise value at time 't-2'. Enterprise value is calculated as market capitalization plus debt minus cash. Following Weir *et al.* (2005b), I expect EV to exhibit a negative relationship with the likelihood of going private.

Q Ratio (Q Ratio): Q ratio is used as a second measure of valuation. It is defined as market capitalization divided by total assets. Following Weir *et al.* (2005a), I expect Q ratio to exhibit a negative relationship with the likelihood of going private.

Market-to-Book ratio (MTB): MTB is used as a third measure of valuation. It is calculated as market value of the company divided by book value of the company's

assets. MTB is considered as an indicator of the growth prospect of a firm (Evans *et al.* 2005; Chapple *et al.* 2010). As firms with low MTB are more likely to be undervalued, I expect MTB to exhibit a negative relationship with the likelihood of going private.

To estimate information asymmetry, four variables are used to capture the information environment of a firm. Leland and Pyle (1977) and Bharath and Dittmar (2010) show that smaller and younger firms have substantial difficulty in signaling the value of their firms. Firms with low visibility and low institutional ownership are also likely to go private. Following Bharath and Dittmar (2010), I choose total assets and revenues of a firm as proxies of information asymmetry. Bharath and Dittmar (2010) argue that the total assets and sales revenues proxy for a host of factors that relate to investor recognition and information production in a public market. Their argument relies on the Chemmanur and Fulghieri (1999) duplicative information production model in which the information production costs are inversely related to larger firms. Hence, I choose the following variables as my information asymmetry variables:

Age of firm (LNAGE): LNAGE is the natural logarithm of number of years between the firms' IPO and being taken over.

Total Assets (LNTA): LNTA is the natural logarithm of total assets.

Sales Revenue (LNSA): LNSA is the natural logarithm of sales revenue.

Institutional Shareholding (INST): INST measures the number of ordinary shares held directly and indirectly by the institutional holders. The institutional shareholding is determined from the annual reports of the sample companies by adding up the shareholding of different institutions. All individual shareholdings were excluded from this category. It is calculated as the absolute number of ordinary shares held by the institutional holders divided by the total number of ordinary shares outstanding and it is expressed as a percentage. Following Bharath and Dittmar (2010), I expect INST to exhibit a negative relationship with the extent of asymmetric information.

For the incentive alignment and monitoring mechanism, I use the following variables:

Managerial Share Ownership (MSO): MSO measures the number of ordinary shares held directly and indirectly by the management of the company. If any person is a member of both management and board, his/her shareholding is considered to be MSO. It is calculated as the absolute number of ordinary shares held by the management team divided by the total number of ordinary shares outstanding and it is expressed as a

percentage. Following Halpern *et al.* (1999) and Weir *et al.* (2005a), I expect MSO to exhibit a positive relationship with the likelihood of going private.

Board Share Ownership (BSO): BSO measures the number of ordinary shares held directly and indirectly by the company board. If any person is a member of both management and board, his/her shareholding is considered to be MSO and thereby excluded from BSO. BSO is calculated as the absolute number of ordinary shares held by the company board divided by the total number of ordinary shares outstanding and it is expressed as percentage. Following Weir *et al.* (2005a) and Weir and Wright (2006), I expect BSO to exhibit a positive relationship with the likelihood of going private.

Board Independence (BIND): BIND is a dummy variable that takes the value 1 if independent non-executive directors represent equal to or less than 50% on the board and 0 otherwise. CGC defines an independent non-executive director as being independent of management and free from any business or other relationship that can hinder the exercise of their free and independent judgment, and their ability to act in the best interests of the company as a whole. CGC recommends a majority of the board members should be independent non-executive directors to ensure the board is independent (CGC, 2003). Following Weir *et al.* (2005a), Weir and Wright (2006) and Florackis and Ozkan (2009a), I expect firms going private to have fewer independent non-executive directors.

CEO-Chair Duality (DUAL): DUAL is a dummy variable that takes the value 1 if the posts of CEO and Chairman are combined and 0 if they are separated. Following Weir *et al.* (2005a) and Weir and Wright (2006), I expect that firms going private to be more likely to combine the posts.

Board Size (BRDSZ): BRDSZ represents the number of directors on the company board. Following Florackis and Ozkan (2009a and 2009b), I expect BRDSZ to exhibit a positive relationship with the likelihood of firms going private.

Takeover Threat (THREAT): THREAT is a dummy variable that takes the value 1 if there is a takeover bid and/or speculation on the target firms within the last 24 months prior to the actual takeover and 0 otherwise. The information on bid and/or the speculation of a bid were identified from the 'ASX Announcement Section' from the DatAnalysis database by a company-by-company basis. Following Eddey *et al.* (1996), Evans *et al.* (2005) and Weir and Wright (2006), I expect a positive relationship between takeover threat and the likelihood of going private.

My control variables are drawn from prior literature of firm-specific accounting variables that may also contribute to the going private decision. Specifically, following Weir *et al.* (2005a and 2005b) and Evans *et al.* (2005), I select the following control variables:

Leverage Ratio (LVG): LVG is a measure of the debt condition of the firm. It is calculated as total liabilities divided by total assets. I expect LVG to exhibit a negative relationship with the likelihood of going private (Weir *et al.* 2005a and 2005b; Evans *et al.* 2005).

Current Ratio (CURR): CURR is a measure of the liquidity conditions of the firms. It is calculated as current assets divided by current liabilities. Following Carroll *et al.* (1988) and Evans *et al.* (2005), I expect CURR to exhibit a positive relationship with the likelihood of going private.

Relative Free Cash Flow (FCF): FCF measures a company's free cash flow. FCF is defined as free cash flow divided by total assets. Free cash is calculated as operating cash flow minus interest, taxes and dividends (Kieschnick 1998; Halpern *et al.* 1999; Weir *et al.* 2005a, 2005b). Following Evans *et al.* (2005) and Chapple *et al.* (2010), I expect FCF to exhibit a positive relationship with the likelihood of going private.

Capital Expenditure (CAPEX): CAPEX measures net capital expenditure. It is defined as spending on new buildings, property and equipment minus depreciation, divided by the book value of total assets expressed as a percentage (Weir and Wright, 2006). Following Opler and Titman (1993) and Weir and Wright (2006), I expect CAPEX to exhibit a negative relationship with the likelihood of going private.

3.4 Descriptive Statistics of the Sample

Table 3.2 below exhibits the descriptive statistics of the whole sample within the sample period. EV, Q ratio and MTB are used as valuation measures in this study. EV has a mean value of 2.79 for which no Australian evidence is available. However, the UK evidence (Weir *et al.* 2005b) on the mean value of EV of 1.27 suggests that the enterprise value of Australian firms is higher in general. The mean value of Q ratio is 2.34. Australian evidence is also not available for Q ratio. The UK evidence (Weir *et al.* 2005a), however, suggests that the mean value of Q ratio ranges from 0.79 for going private firms to 1.08 for firms that do not go private. This suggests that the Q ratio value of Australian firms is also higher in general. MTB has a mean value of 2.77. Chapple *et al.* (2010) suggests that the mean value of MTB ranges from 2.07 for PE firms to 3.25

for Non-PE firms. This suggests that the sample firms used in this study also have a similar pattern in terms of their MTB.

LNAGE, LNTA, LNSA and INST are the information variables in my study. The mean value of LNAGE of 2.12 with a very low variation shows firms included in the sample have not been listed on the ASX for a longer time before they are subject to the takeovers. LNSA and LNTA show a similar pattern of low variation in their mean values. The INST shows, on average, Australian firms have around 34 percent institutional holding, consistent with Nottage (2008) who finds Australian takeover target firms generally have 35 to 50 percent institutional shareholdings.

MSO variable indicates an average of nine percent shareholdings by the management of Australian takeover target firms. It is interesting to see that the maximum level of MSO is 76.4 percent and the minimum level of MSO is only 0.25 percent. Evans *et al.* (2005) suggest that the Australian firms, on an average, have 14 to 16 percent managerial ownership. BSO shows a mean value of seven percent. This means that the board members of the Australian target firms do not hold a large portion of ordinary shares in comparison to their management. BIND variable shows that 43.4 percent of Australian target firms do not have a majority of independent non-executive directors on their board. The UK evidence (Weir and Wright, 2006) suggests that on an average 61 percent of the UK target firms do not have board independence. This suggests that Australian target firms have more independence on their board. The mean value of DUAL variable shows that only around ten percent of the target firms have duality in their board, which indicates that the Australian target firms, in most cases, separate the post of CEO and Board Chair. On the other hand, twenty percent of the UK target firms have duality (Weir and Wright, 2006). A mean value of around six of BRDSZ indicates that Australian target firms do not have larger boards. Over a third of the Australian target firms are subject to takeover speculation before they are taken over. UK evidence suggests a similar picture (Weir and Wright, 2006) that around 31 percent of the UK target firms experience takeover rumors or threats within 15 months prior to their takeover. Takeover threat is considered as an external control mechanism (Lehn and Poulsen, 1989) and is expected to play their role when internal control mechanism is weak. This indicates a possibility that the market for corporate control might be active in Australia.

Table 3.2: Descriptive Statistics of the Whole Sample

This table shows the basic characteristics of all the firms included in the study. EV is the enterprise value ratio calculated as enterprise value at time t divided by enterprise value at time t-2. Q Ratio is market capitalization divided by total assets. MTB is the market-to-book ratio calculated as market value of assets divided by the book value of assets. LNAGE is the natural log of the number of years between the firms' IPO and their being taken over. LNTA is the natural log of total assets. LNSA is the natural log of sales. INST is the percentage of ordinary shares held by the institutional holders. MSO is the percentage of ordinary shares held by management. BSO is the percentage of ordinary shares held by the board members. BIND is a binary variable that takes the value 1 if majority of the board members are independent non-executive directors and 0 otherwise. DUAL is a binary variable that takes the value 1 if CEO and Board-Chair are the same person and 0 otherwise. BRDSZ is the number of directors on the company board. THREAT is a binary variable that takes the value 1 if the target firm faces takeover threat and/or speculation of being taken over within the last 24 months of actual takeover and 0 otherwise. LVG is the leverage ratio calculated as total liabilities divided by total assets. CURR is the current ratio calculated as current assets divided by current liabilities. FCF is the free cash flow divided by total assets. Free cash flow is calculated as operating cash flow minus interest, taxes and dividends. CAPEX is the spending on new buildings, property and equipment minus depreciation, divided by the book value of total assets.

	Mean	Median	Maximum	Minimum	Std. Dev.
EV	2.797	1.938	22.87	0.035	2.864
Q RATIO	2.341	1.083	65.56	0.055	5.057
MTB	2.771	1.571	37.24	0.161	3.521
LNAGE	2.116	2.197	4.159	0	0.908
LNSA	17.67	18.006	24.008	9.531	2.781
LNTA	18.54	18.607	23.12	12.75	1.889
INST	0.341	0.313	0.848	0.003	0.189
MSO	0.091	0.051	0.764	0.003	0.122
BSO	0.067	0.026	0.878	0.0002	0.117
BIND	0.434	0	1	0	0.497
DUAL	0.101	0	1	0	0.302
BRDSZ	5.779	6	14	3	1.797
THREAT	0.364	0	1	0	0.482
LVG	0.437	0.421	2.169	0.005	0.324
CURR	2.714	1.655	100.85	0.111	6.806
FCF	0.068	0.102	1.265	-3.174	0.351
CAPEX	0.097	0.041	1.871	1.34E-05	0.182
Observations			258		

The mean value of leverage ratio is 44 percent with a low level of standard deviation. Evans *et al.* (2005) suggest that the leverage ratio in Australian target firm ranges from

31 percent for remaining public firms to 64 percent for going private firms, while Chapple *et al.* (2010) suggest that the average debt-to-equity ratio in Australian PE target firms is 43 percent. Current ratio has a mean value of 2.71 with a very high level of standard deviation. This is consistent with Chapple *et al.* (2010) who suggest that current ratio in Australian target firms varies from 1.43 to 4.48 for PE and Non-PE target firms. The relative FCF has a mean value of 0.07 and this picture is also similar to that of Chapple *et al.* (2010) who suggest that Australian PE target firms have an average relative FCF of 0.06. CAPEX has a mean value of 0.09 with a low standard deviation. This is also similar to the evidence presented by Chapple *et al.* (2010) who suggest that Australian target firms have relative capital expenditure between 0.06 and 0.07.

3.5 Chapter Summary

This chapter presents a comprehensive description of the sample selection and data collection process. The variables, which have been selected for this study, are also defined and explained in the chapter. Finally, descriptive statistics of the sample have been presented. For the purpose of empirical investigation, the final sample in the study consists of 129 PE and 129 traditional takeover target firms, which means that 258 target firms in successful takeovers have been included in the sample from ASX. The following three chapters present three different papers on three different aspects of private equity that I examine in this study in the context of Australia.

CHAPTER 4

INFORMATION ASYMMETRY, UNDERVALUATION
AND PRIVATE EQUITY

4.1 Introduction

In February 2007, a consortium of private equity investors known as APA launched a private takeover bid for Qantas, one of the largest and best known public corporations in Australia. Facing the bid, the Qantas board recommended its acceptance to the shareholders, citing low share market valuation as the primary reason. In a letter to the shareholders Qantas chairperson Margaret Jackson indicated that the private equity led bid offer was at a substantial premium on the existing share price range and said, "*Qantas has delivered year-on-year profits, growth and diversification. But while the business had prospered, the Qantas share price has not. The offer is the best available option to enable Qantas shareholders to realize significant value for their investment.*"[3] Although the bid later collapsed due to mounting pressures of political concerns and rival bidding, it brought to the fore the most often cited reason for a public corporation going private: undervaluation.

The true worth of a corporation is plagued with the problem of information asymmetry between management and outsiders. The maximum value that can be realized from the assets in place and available future investment opportunities is difficult to determine due to lack of information and the ensuing information asymmetry. Managers, who are likely to have superior private information, often perceive that the share price is undervalued and does not reflect the true potential of their firm. The information asymmetry and the concomitant undervaluation problem are further exacerbated in the capital market. For example, it is difficult to use the equity market to finance available investments since low share price is a deterrent to attracting the interest of institutional shareholders and fund managers. The lack of institutional interest in itself creates trading illiquidity in the equity market (Bharath and Dittmar, 2010). All these provide incentives to both

---

[3] Letter to Shareholders, Qantas Corporation, 10 February 2007.

managers and private equity investors to take the firm private in order to 'capture the full value' of an ongoing public corporation. The anecdotal evidence of the private equity takeover attempt of Qantas in 2007 typifies the undervaluation hypothesis as a motivation for private equity takeovers.

Despite the major role of information asymmetry in valuation and its subsequent effect on private equity takeovers, the extant research in this area has been limited. The only paper in this area, in Australia, is by Chapple *et al.* (2010) with a focus on an exploratory investigation into characteristics of private equity transactions. Beyond the research evidence available for the Australian market, the general nature of information asymmetry and undervaluation and their interplay in the private equity context remains an unexplored area. In this paper, I investigate the information asymmetry and undervaluation of the public firm as a rationale for going private.

Besides the need to understand the role of information asymmetry and undervaluation, there are specific important reasons for studying private equity takeovers in the Australian context. Private equity investment activity in Australia has grown to record levels in recent years. According to the 2010 yearbook of the AVCAL, private equity funds raised in Australia have increased from $585 million in 2001 to $1,456 million in 2010 with commensurate levels of growth over the same years in going-private deals. The growth and effect of these transactions in capital markets has attracted regulatory concerns in Australia with the Australian Senate holding a parliamentary inquiry into the private equity investment[4]. Despite the development and ensuing interest in capital markets in going private activities, there has not been any proper analysis of what motivates going private transactions in Australia. Given the size and growth of this market in Australia, it is important to understand such motivations.

Prior research on private equity, in general, has been exclusively limited to US and UK samples. There has been no systematic research on the rationale for Australian firms opting for private equity takeover while a vigorous private equity market has been

---

[4]Commonwealth of Australia, Senate Standing Committee on Economics, Private Equity investment in Australia, August, 2007.

developed in Australia since the 1990s[5]. It is also questionable whether the evidences applicable to US and UK private equity transaction studies can be generalized in the Australian context. First, the US private equity market is characterized by the relative ease of credit availability, especially via junk bond and mezzanine financing. In contrast, the Australian market is characterized with a lesser depth of financing choices and the size of financing tends to be smaller. Since the sources of funds in the US and UK settings have different characteristics (flexibility, terms of maturity, rates and covenants) to those in Australia, it is likely that these differences will have effect on all aspects of going private deals (Renneboog *et al.* 2007). Second, the Australian takeover laws do not specifically address the potential for conflicts in any takeovers, including PTP takeovers. In the US and UK, specific rules have been established to govern going private transactions. For example, rule 13e-3 under the s13(e) of the Securities Exchange Act in the US requires detailed disclosure regarding the fairness of the transaction and imposes binding wait periods before consummation of the takeover. In Australia, under the Corporations Act 2001, private equity transactions are viewed as any other takeover requiring disclosure only after the acquirer raises its stake in the target firm above the threshold level of twenty percent (Hill, 2005 and 2010). For these reasons, a comprehensive study on motivation for Australian firms going private provides an important contribution to the private equity literature.

My analysis reveals that market undervaluation is the dominant factor in the likelihood that firms will be involved in PE transactions in Australia. Information asymmetry per se is not a sufficient condition for firms going private but valuation measures are. Regardless of the measure of information asymmetry used, I find that once valuation is introduced as an explanatory factor, the likelihood of private equity takeover (as opposed to a public takeover) changes significantly. A similar result is obtained for alternative measures of valuation. In other results, I find that the level of institutional holdings and private equity transactions are negatively related.

The next section of the paper is a discussion of the underlying factors and interplay of information asymmetry and undervaluation for going private firms. Section 3 explains

---

[5]Chapple *et al.* (2010) provide an exploratory study of features of Australian going private firms with a smaller number of observations.

data and empirical models. Section 4 is discussion of results and analysis. Section 5 is conclusion.

4.2   Information Asymmetry, Undervaluation and Going-Private

Private equity takeovers, in their most common form, involve a PTP transaction which takes place when a publicly quoted company is taken over by a specialist fund or consortium and the target company goes private through a delisting from the stock market (Frankfurter and Gunay, 1992). The reasons and decision to go private are complex with myriad issues such as information, liquidity, control, agency and other considerations in interplay. In this section I draw upon extant theories to focus on the information asymmetry aspects of private equity takeovers to build a testable model of how information asymmetry via undervaluation (or mis-valuation) affects the going-private decision.

A key aspect of a firm's decision to go public via initial public offering and stay listed on the stock exchange is to make information about the firm available to the outside investors. Nonetheless, several information asymmetry models highlight the costs associated with information production and dissemination which can lead to reversing the decision to stay public and push the firm to go private. In the Chemmanur and Fulghieri (1999) model, costs are related to duplicative information production in an initial public offering setting when firms are faced with a large pool of outside investors. These costs are ultimately borne by the firm. In order to reduce this cost, a firm may choose to go private if production costs of outside investors increase or the stock price does not reflect accurate information (Bharath and Dittmar, 2010). A related issue in this context is a firm's product market environment and its effect on information dissemination (Campbell, 1981). If disclosure requirements in a public market are likely to force a firm to divulge its competitive information in the product market, they will become an important consideration for the firm to opt out of the public capital market and go private.

The asymmetric information environment between insiders and outside investors in a public capital market is partially mitigated by signaling methods used by the insiders. However, information signaling coupled with moral hazard creates the well-known adverse selection or 'lemon' problem for all investors (Akerlof, 1970). The adverse

selection problem imposes an unavoidable cost on all firms by lowering the average observed firm value. This cost is particularly severe for young, less well-known firms which suffer from less market visibility and poor investor recognition. Trying to convey information regarding the future investment opportunity set through credible signaling for these public firms is likely to be more costly than for similar firms in private hands. Thus, firms with smaller, younger and lower visibility profiles are likely to be main candidates in facing excessive adverse selection costs and, thus, are likely to prefer to go private to avoid these costs.

In private equity takeovers, the material effect of information asymmetry is the perceived undervaluation by the insiders or the private equity consortiums or by both. The effects of information asymmetry are reflected in readily observable and comparative valuation metrics that are likely to act as key drivers of private equity takeovers. It is important to note here that I do not distinguish between private equity takeovers initiated by the management and that by outsiders. The primary focus is the role of information asymmetry and undervaluation per se that is likely to bring forth these takeovers, as illustrated in the anecdotal evidence of Qantas takeover. Thus, in this study I argue and empirically test the view that firms that are undervalued by the market as a result of information asymmetry are likely to attract private equity bids.

It is further argued that levels of information asymmetry play a significant role in predicting private takeovers, more so than does the low valuation. Although valuation metrics are the triggers of private equity takeovers, the degree of information asymmetry is the basis of undervaluation. Indeed, some private equity firms pride themselves in creating value for their investors by investing in relatively 'little understood' firms (Metrick and Yasuda, 2011). Regardless of valuation measures, which are relative and transient, firms with a higher degree of information asymmetry should expect to have a higher private takeover probability. Thus, it is proposed that, in general, the relation between undervaluation and the likelihood of private equity takeover is stronger at high levels of information asymmetry. The above interaction between information asymmetry and undervaluation has not been previously considered in the private equity literature. In this sense, the current study potentially provides a more comprehensive and rigorous test of the undervaluation hypothesis concerning private equity takeovers.

4.3 Research Design and Data

The sample consists of all successful going private transactions involving companies listed on the ASX and made between 1 January 1990 and 31 December 2010. The sample is formed by utilizing a variety of databases and resources. Specifically the initial sample of all takeovers is collected from the SDC Platinum ANZ M&A Database. Initially a total of 517 successful going private bids are identified and the sample is screened for bids involving an acquirer with a status of 'Joint Venture' or 'Subsidiaries'. My primary sample of going private bids are considered as a PE led bid only when it is financed wholly or partly by a PE firm to ensure that the firm has indeed become private and acquiring companies are not affiliated with public corporations. The going private transactions are then re-confirmed via the list of ASX delisted firms from Aspect Huntley Morning Star DatAnalysis Database. This list of PE takeovers is then confirmed through the Bureau Van-Dijk ORBIS Global Database. This process yields 129 firms as the final sample. Annual accounting information is obtained from Aspect Huntley Morning Star FinAnalysis database. In addition, institutional shareholding is collected from the company annual reports on a company-by-company basis.

Table 4.1 provides the frequency distribution of PTP deals in Australia in terms of the number of deals. It shows that a total of 4546 completed deals took place in ASX. A total of 517 completed going private transactions have taken place in Australia within the past 21 years, constituting around 12 percent of all completed deals. As is mentioned in Evans *et al.* (2005), approximately ten percent of all deals in Australia were going private deals. With a steady increase, the going private deals become around twelve percent in recent times. Stromberg (2007) notes that, going private deals increased considerably after 2000. Table 4.1 suggests similar evidence for Australia where the majority of PTP deals took place between 2001 and 2007. Panel B shows the screening process of selecting the private equity deals.

Table 4.1 panel C classifies the PE takeover firms into various industry groupings showing the number of firms in each industry group. ASX divides its listed companies into 25 different industry groups, including sub-groups. Prior Australian studies (Evans *et al.* 2005; Eddey *et al.* 1996) suggest that the financial sector had the greatest number of going private deals in Australia. Chapple *et al.* (2010) find a very low concentration of Australian PE firms in the financial and mining sectors. The evidence in Table 4.1 does

not agree with Chapple *et al.* (2010) in terms of the mining sector, but shows a similar pattern in terms of the financial sector. A possible reason for these differences could be the differences in the time period covered by these studies. However, it is apparent that during the last two decades, the PE firms in Australia did not concentrate in any particular industry sector. This can be seen from Table 4.1 in that out of 25 industry groupings available in ASX, PE transactions takes place in 16 industry sectors. This is consistent with the idea that PE firms in Australia are 'opportunistic' and do not seem to concentrate on any particular industry sector for their target firms (Chapple *et al.* 2010).

Table 4.1: Private Equity Transactions in Australia, 1990 – 2010

Panel A: Annual Frequency of all completed Going Private Transactions

	All Non-PTP Deals		All Going Private		Only Private Equity	
Year	Number	Percent	Number	Percent	Number	Percent
1990 - 1992	171	4.24	11	2.13	0	0.00
1993 - 1995	340	8.44	34	6.58	1	0.77
1996 - 1998	462	11.47	40	7.74	5	3.88
1999 - 2001	341	8.46	51	9.86	19	14.73
2002 - 2004	777	19.29	93	17.98	33	25.58
2005 - 2007	799	19.83	133	25.73	52	40.31
2008 - 2010	1139	28.27	155	29.98	19	14.73
Total	4029	100%	517	100%	129	100%

Panel B: Private Equity Deals in Australia

	Sub-total	Total
All PTP Deals	517	
Less: Acquirers or targets with status of 'Subsidiary' or 'Joint Venture'	95	422
Less: Deals not financed (wholly/partly) by private equity firms	244	178
Less: Information not available for the last 3 years	49	129
Final Total of Private Equity deals		129

Panel C: Industry Concentration of Private Equity Transactions

Industry	PE Deals	Industry	PE Deals
Mining	22	Transportation Services	4
Oil and Gas exploration	4	Communication Supplies/Services	12
Equipment Production/Supplies	7	Media, Audio/Video Distribution	8
Construction Services	7	Amusement/Recreation Services	7
Food, Drink and Kindered Products	6	Real Estate Investment	9
Firms, Dealers, Exchanges	8	Miscellaneous Trade	11
Financial Institutions	2	Business Services	13
Health and Allied Services	6	Hotels and Motels	4
Total Completed PE Deals: 129			

57

A key aspect of the proposed hypotheses in the earlier section is the uniqueness of the private equity takeover rationale from an undervaluation perspective. Since takeovers by public companies are governed by similar aspects of valuation and information asymmetry, I construct a matching sample of firms which are taken over in the public market via acquisition by a publicly listed firm and in which their assets stayed public. I term this set of firms as 'Non PE' firms and use comparative analysis throughout the study[6]. For each PE firm, I use a two-dimensional scoring method to match to a non-PE firm. I first match the PE firm in the same industry sector that has a public-to-public transaction and, secondly, in the same year as the PE firm.

The first set of regression analysis involves testing the association between information variables and valuation metrics. If information asymmetry plays any role in valuation of firms, specifically in order to reduce valuation, it should be observed in a cross sectional regression as follows:

$$Val_i = \alpha + \beta_1 Asy_i + \beta_2 Con_i + \varepsilon_i \qquad (1)$$

Val_i and Asy_i are the valuation and information asymmetry measures of a firm i with Con_i representing a vector of control variables. I construct three valuation metrics that are relevant in the private equity literature and thought to trigger private equity takeovers: Ratio of Enterprise Value (EV), Q ratio (Q-ratio) and Market-to-Book Ratio (MTB). Following Weir *et al.* (2005b), I compute the ratio of enterprise values in year t to that in year t-2. Enterprise value is measured as market capitalization plus debt minus cash. The EV measures the relative changes in valuation which are likely to act as a catalyst for private equity takeovers. Further, the enterprise value is a key metric for private equity investors and funds to assess the value of a firm. I also use Q ratio as another measure of valuation following Morck *et al.* (1988) and Weir *et al.* (2005a). Q ratio, a widely used measure of firm valuation, is calculated as market capitalization divided by total assets. MTB is also a well-known valuation metric that reflects stock price valuation relative to its intrinsic book value. Firms with a low MTB ratio are considered to have low growth prospects and consequently can be regarded as undervalued by the market and can impact on the decision to go private (Evans *et al.* 2005). I measure MTB as the most recent available annual market value of the firm's equity divided by the book-value of assets.

---

[6] Matching samples have been used in studies of private equity transactions. See for example, Lehn and Poulsen (1989) and Weir *et al.* (2005a, 2005b).

For the information asymmetry measures, I choose four variables that capture the information environment of a firm. Leland and Pyle (1977) show that young firms have substantial difficulty in signaling the value of their firms and face significant adverse selection cost. Firms with low visibility and low institutional ownership are likely to go private to avoid these costs. In a recent paper, Bharath and Dittmar (2010) find that these factors are important drivers of a firms' decision to go private. Hence I choose the age of a firm (years subsequent to its IPO on the ASX) and institutional holding as my information variables. Following Bharath and Dittmar (2010) I also choose total assets and revenues of a firm as proxies of information asymmetry. Bharath and Dittmar (2010) argue that the total assets and sales revenues proxy for a host of factors that relate to investor recognition and information production in a public market. Their argument relies on the Chemmanur and Fulghieri (1999) duplicative information production model in which the information production costs are inversely related to larger firms.

A reasonable question at this point is why I do not use earnings based measures of firm information asymmetry such as analyst forecasts and the earnings forecast dispersion. First, my focus is on cross-sectional variation of information asymmetry and its relationship with the firm-level undervaluation that triggers the going private decision. The earnings forecast based information asymmetry measures are more suitable in capturing the time varying asymmetric information properties (Autore and Kovacs, 2004). Second, firms in the sample exhibit very low analyst following, if any at all, with very low institutional holding. Given the premise that going private decisions are related to high information asymmetry, it is not surprising that the analyst followings are sparse in my sample. For these reasons I do not use earnings forecast based measures of information asymmetry.

The control variables are drawn from prior literature of firm-specific accounting variables that may also contribute to the going private decision. Specifically, following Weir *et al.* (2005b) I select leverage, current ratio, free cash flow and capital expenditure to be the control variables. Below I list all the variables and their measurement.

Enterprise Value Ratio (EV): EV ratio is used as a measure of valuation. It is calculated as enterprise value at the year of takeover transaction, 't', divided by the

enterprise value at time 't-2'. Enterprise value is measured as market capitalization plus debt minus cash.

Q Ratio (Q-Ratio): Q ratio is the second measure of valuation. It is calculated as market capitalization divided by total assets.

Market-to-Book Ratio (MTB): Market-to-Book ratio is the third measure of valuation. It is calculated as market value of the company divided by book value of the company's assets.

Age of firm (LNAGE): LNAGE is the natural logarithm of number of years between the firms' IPO and being taken over.

Total Assets (LNTA): LNTA is the natural logarithm of total assets.

Sales Revenue (LNSA): LNSA is the natural logarithm of sales revenue.

Institutional Holding (INST): INST is the number of ordinary shares held by the institutional holders expressed as a percentage of total shares outstanding.

Leverage (LVG): LVG is a measure of the debt condition of the firm. It is calculated as total liabilities divided by total assets.

Current ratio (CURR): CURR is a measure of the liquidity condition of the firm. It is calculated as current assets divided by current liabilities.

Relative Free Cash Flow (FCF): FCF is measured as operating cash flow minus interest, taxes and dividends. Relative FCF is found as free cash flow divided by total assets.

Capital Expenditure (CAPEX): CAPEX measures a company's net capital expenditure. It is defined as spending on new buildings, property and equipment minus depreciation, divided by the book value of total assets.

I use logistic regression to model a firm's decision to go private. In the first set of logit regressions, I estimate the probability P_i of a firm going private as:

$$L_i = \text{Ln} [P_i/(1-P_i)] = \alpha + \beta_1 \text{Asy}_i + \beta_2 \text{Con}_i + \varepsilon_i \qquad (2)$$

I then test the joint effect of information asymmetry and valuation measures on going private decision through the second logit regression as follows:

$$L_i = \text{Ln} [P_i/(1-P_i)] = \alpha + \beta_1 \text{Asy}_i + \beta_2 \text{Asy}_i*\text{Val}_i + \beta_3 \text{Con}_i + \varepsilon_i \qquad (3)$$

4.4 Univariate Analysis

Table 4.2 shows the results of univariate tests of the proposition that firms going private through PE takeovers experienced declining market valuation compared to traditional

takeover firms. The mean values of LNSA and INST of PEs are significantly different from those of the Non-PEs at the one percent level; while the mean value of LNTA of PEs is significantly different from those of Non-PEs at the five percent level. The mean values of the EV, Q ratio and MTB of PEs are significantly different from those of Non-PEs at the one percent level. In addition, the mean values of the LVG and CURR of the PE sample also show a significant difference from those of the Non-PE sample. The mean values of FCF and CAPEX for the PE and Non-PE samples are not significantly different. The median values of LNSA, INST, EV, Q ratio, MTB, LVG and CURR of PEs are also significantly different from those of Non-PE target firms at the one percent level. For both the PE and Non-PE target firms, the results of the t-tests and z-tests show that there are significant differences in mean values of the characteristics of these firms. These univariate results, therefore, support the hypotheses and show that Australian PE target firms have different firm attributes.

Table 4.2: Univariate Analysis of PE and Non-PE Samples

Table 4.2 shows the results of t-test and Wilcoxon rank-sum Mann-Whitney test to identify if the mean and median values of different variables of PE and Non-PE sample target firms are significantly different from each other. The sample is drawn over the period from 1990 to 2010 and as in Table 4.1. LNAGE is the natural log of the number of years between the firms' IPO and their being taken over. LNTA is the natural log of total assets. LNSA is the natural log of sales. INST is the number of ordinary shares held by the institutional holders expressed as percentage of total shares outstanding. EV is the enterprise value ratio calculated as enterprise value at time t divided by enterprise value at time t–2. Q Ratio is market capitalization divided by total assets. MTB is the market-to-book ratio calculated as market value of assets divided by the book value of assets. LVG is the leverage ratio calculated as total liabilities divided by total assets. CURR is the current ratio calculated as current assets divided by current liabilities. FCF is the free cash flow divided by total assets. Free cash flow is calculated as operating cash flow minus interest, taxes and dividends. CAPEX is the spending on new buildings, property and equipment minus depreciation, divided by the book value of total assets. ** indicates $p < 0.01$ and * indicates $p < 0.05$.

	Mean				Median			
	PE	Non-PE	t-stat	p-value	PE	Non-PE	z-stat	p-value
LNAGE	2.110	2.12	0.13	0.551	2.190	2.190	0.13	0.899
LNTA	18.76	18.32	-1.89*	0.029	18.82	18.27	-1.89	0.058
LNSA	18.08	17.25	-2.42**	0.008	18.35	17.48	-2.25*	0.024
INST	0.256	0.424	7.92**	0.000	0.218	0.405	7.46**	0.000
EV	2.009	3.586	4.60**	0.000	1.163	2.725	8.82**	0.000
Q Ratio	1.026	3.656	4.32**	0.000	0.669	1.736	7.79**	0.000
MTB	1.034	4.508	9.10**	0.000	1.050	3.330	13.33**	0.000
LVG	0.496	0.380	-2.91**	0.002	0.465	0.336	-3.64**	0.000
CURR	4.095	1.332	-3.32**	0.000	2.25	1.23	-8.80**	0.000
FCF	0.100	0.037	-1.45	0.074	0.104	0.093	-0.57	0.569
CAPEX	0.085	0.109	1.07	0.142	0.041	0.041	0.20	0.845
Observations					258			

4.5 Multicollinearity Test

High correlations among independent variables can indicate the possibility of multicollinearity which means that the resultant analysis may not give valid results about individual predictors. As a result, variables having multicollinearity should not be included in the same regression equation (Gujarati, 2005). Hair *et al.* (1995) suggest that a bivariate correlation of around 0.9 and above is a strong indicator of multicollinearity in a model; while Tabachnik and Fidell (1996) contend that bivariate correlations over 0.7 may suggest redundant variables in a model. Licht (1998) argues that a multiple regression model can have multicollinearity when the bivariate correlation value becomes 0.8 or above. Table 4.3 shows the correlation matrix for the independent variables generated through the Spearman and Pearson methods. The correlation coefficient of 0.791 (Pearson) between MTB and Q ratio seems to be very high and accordingly would not be used in the same regression. The correlation matrix does not exhibit any other significantly high level of correlation among the independent variables. Accordingly, it is not needed to exclude any of the variables from the models.

Table 4.3: Correlation among Independent Variables

Table 4.3 shows the correlation coefficients among the independent variables. The top diagonal numbers are Spearman correlation coefficients, while the bottom diagonal numbers are Pearson correlation coefficients. LNAGE is the natural log of the number of years between the firms' IPO and their being taken over. LNTA is the natural log of total assets. LNSA is the natural log of sales. INST is the number of ordinary shares held by the institutional holders expressed as percentage of total shares outstanding. EV is the enterprise value ratio calculated as enterprise value at time t divided by enterprise value at time t–2. Q Ratio is market capitalization divided by total assets. MTB is the market-to-book ratio calculated as market value of assets divided by the book value of assets. LVG is the leverage ratio calculated as total liabilities divided by total assets. CURR is the current ratio calculated as current assets divided by current liabilities. FCF is the free cash flow divided by total assets. Free cash flow is calculated as operating cash flow minus interest, taxes and dividends. CAPEX is the spending on new buildings, property and equipment minus depreciation, divided by the book value of total assets.

	LNAGE	LNTA	LNSA	INST	EV	Q Ratio	MTB	LVG	CURR	FCF	CAPEX
LNAGE	1	0.117	0.165	0.099	-0.059	-0.084	0.029	0.099	0.019	0.068	0.077
LNTA	0.153	1	0.698	0.278	-0.118	-0.306	-0.109	0.255	0.031	0.469	-0.141
LNSA	0.193	0.672	1	0.098	-0.086	-0.323	-0.136	0.385	0.008	0.592	-0.083
INST	0.097	0.257	0.079	1	0.203	0.212	0.389	-0.083	-0.316	0.047	0.016
EV	-0.091	-0.098	-0.083	0.041	1	0.234	0.425	-0.165	-0.296	-0.056	0.007
Q Ratio	-0.103	-0.368	-0.276	0.075	0.049	1	0.613	-0.397	-0.217	-0.124	0.235
MTB	-0.044	-0.212	-0.154	0.193	0.166	0.791	1	-0.209	-0.495	0.013	0.113
LVG	0.098	0.092	0.261	-0.085	-0.094	-0.046	0.031	1	-0.024	0.217	-0.149
CURR	-0.041	-0.072	-0.093	-0.182	-0.079	-0.043	-0.105	-0.035	1	-0.091	0.068
FCF	0.085	0.422	0.452	-0.008	-0.029	-0.641	-0.452	-0.031	-0.043	1	0.039
CAPEX	0.021	-0.339	-0.275	0.079	-0.036	0.588	0.362	-0.022	-0.001	-0.358	1
Observations	258										

4.6 Information Asymmetry and Undervaluation

Table 4.4 (Panels A, B and C) presents the estimates from the cross-sectional regression of valuation metrics (using Equation 1) on information asymmetry measures. Panels A, B and C show the estimates with EV, Q ratio and MTB separately. If valuation metrics are effective in capturing the effects of information asymmetry, it should show positive association between these variables (Models 1 to 12). Using the MTB as a valuation metric (Models 9 to 12 in Table 4.4: Panel C), it is found that the information variables of LNTA, INST and LNSA are positively related to valuation, but weakly so. The INST variable, which is the measure of institutional shareholding, however, appears to be robustly related to MTB. Using EV as another valuation metric (Models 1 to 4 in Table 4.4: Panel A), similar weak association is found between information asymmetry and valuation. LNTA has a statistically significant relationship in the regression with EV as the dependent variable, while LNSA has a statistically significant relationship in the regression with Q ratio as the dependent variable (Models 5 to 8 in Table 4.4: Panel B). The signs of the coefficients of LNAGE, LNTA and LNSA are not consistent across the regressions with alternative measures of valuation. Overall, the results in Table 4.4 (Panel A, B and C) do not portray an illuminative picture on the association between information asymmetry and valuation measures.

I now use the logit specification of Equation 2 to estimate the probability of a going private decision. Table 4.5 presents the estimates of this probability of going private. Among the information variables, the coefficient estimate on INST in Table 4.5 is highly significant at less than the one percent level. This negative estimate shows that the institutional holding level of firms strongly deters the likelihood of a firm being taken over in a private equity transaction. To the extent that private equity investors look for firms which have low investor recognition (in order to capture the undervaluation), the negative association between the probability of private equity transaction and INST captures the reluctance of the investors to engage in transactions of firms with high institutional shareholding which are unlikely to be undervalued. Among the control variables, it is interesting to note that the LVG and CURR variables appear to be strong predictors of private equity transactions. High leverage signifies an unhealthy financial condition which may be a characteristic the private equity investors look for to opportunistically capture the underlying value of the firm. A high current ratio is an

indication of a firm with high liquid asset; a factor attractive for any takeover especially private equity investment.

Table 4.4: Measuring the Effect of Information Asymmetry on Valuation

This table shows the cross-sectional OLS regression of information asymmetry variables on valuation measures. EV is the enterprise value ratio calculated as enterprise value at time t divided by enterprise value at time t–2. Q Ratio is market capitalization divided by total assets. MTB is the market-to-book ratio calculated as market value of assets divided by the book value of assets. LVG is the leverage ratio calculated as total liabilities divided by total assets. CURR is the current ratio calculated as current assets divided by current liabilities. FCF is the free cash flow divided by total assets. Free cash flow is calculated as operating cash flow minus interest, taxes and dividends. CAPEX is the spending on new buildings, property and equipment minus depreciation, divided by the book value of total assets. Figures in the parentheses represent standard error of estimates. Results reported are heteroskedasticity consistent with ** and * denoting significance levels at 1% and 5%, respectively.

Panel A: Information Asymmetry and EV

	(1)	(2)	(3)	(4)
Constant	3.894**	3.279**	6.688**	4.751**
	(7.214)	(6.697)	(4.178)	(4.038)
LNAGE	-0.252			
	(-1.417)			
LNTA			-0.178*	
			(-2.188)	
LNSA				-0.081
				(-1.271)
INST		0.329		
		(0.397)		
LVG	-0.812	-0.866	-0.783	-0.697
	(-1.561)	(-1.644)	(-1.515)	(-1.402)
CURR	-0.037**	-0.034**	-0.038**	-0.037**
	(-2.915)	(-2.712)	(-3.165)	(-2.951)
FCF	-0.394	-0.467	-0.133	-0.199
	(-0.927)	(-1.099)	(-0.299)	(-0.451)
CAPEX	-0.838	-0.944	-1.312	-1.066
	(-0.977)	(-1.136)	(-1.562)	(-1.283)
R^2	0.026	0.021	0.031	0.024
F-statistic	1.353	1.046	1.587	1.251
p-(F-stat)	0.243	0.391	0.165	0.286
Observations	258	258	258	258

Panel B: Information Asymmetry and Q Ratio

	(5)	(6)	(7)	(8)
Constant	2.987**	2.010**	3.410	-0.762
	(0.602)	(0.576)	(2.371)	(1.542)
LNAGE	-0.383			
	(0.233)			
LNTA			-0.064	
			(0.127)	
LNSA				0.180**
				(0.0893)
INST		0.620		
		(1.134)		
LVG	-0.739	-0.815	-0.812	-1.261*
	(0.650)	(0.652)	(0.653)	(0.676)
CURR	-0.051	-0.045	-0.049	-0.0437
	(0.031)	(0.032)	(0.031)	(0.0308)
FCF	-7.088**	-7.199**	-7.077**	-7.786**
	(0.644)	(0.644)	(0.686)	(0.703)
CAPEX	11.46**	11.29**	11.20**	11.67**
	(1.232)	(1.239)	(1.267)	(1.237)
R^2	0.569	0.565	0.565	0.572
F-statistic	67.24	65.51	65.52	66.63
p-(F-stat)	0.000	0.000	0.000	0.000
Observations	258	258	258	258

Panel C: Information Asymmetry and MTB

	(9)	(10)	(11)	(12)
Constant	2.862**	1.588**	2.092	0.814
	(4.113)	(2.406)	(0.833)	(0.417)
LNAGE	-0.096			
	(-0.489)			
LNTA			0.032	
			(0.229)	
LNSA				0.111
				(0.943)
INST		2.947**		
		(3.242)		
LVG	0.249	0.376	0.204	-0.035
	(0.215)	(0.336)	(0.172)	(-0.028)
CURR	-0.063	-0.047	-0.062	-0.059
	(-1.689)	(-1.433)	(-1.705)	(-1.701)
FCF	-3.744*	-3.787*	-3.829*	-4.137*
	(-2.313)	(-2.321)	(-2.186)	(-2.265)
CAPEX	4.439	4.162	4.479	4.616
	(1.888)	(1.685)	(1.811)	(1.932)
R^2	0.266	0.289	0.266	0.271
F-statistic	18.29	20.55	18.25	18.75
p-(F-stat)	0.000	0.000	0.000	0.000
Observations	258	258	258	258

Table 4.5: Measuring the effect of Information Asymmetry on Going Private

Table 4.5 shows the results of multivariate logit regression of information asymmetry variables on going private decisions. LNAGE is the natural log of the number of years between the firms' IPO and their being taken over. LNTA is the natural log of total assets. LNSA is the natural log of sales. INST is the number of ordinary shares held by the institutional holders expressed as percentage of total shares outstanding. LVG is the leverage ratio calculated as total liabilities divided by total assets. CURR is the current ratio calculated as current assets divided by current liabilities. FCF is the free cash flow divided by total assets. Free cash flow is calculated as operating cash flow minus interest, taxes and dividends. CAPEX is the spending on new buildings, property and equipment minus depreciation, divided by the book value of total assets. Figures in the parentheses represent standard error of estimates. Results reported are heteroskedasticity consistent with ** and * denoting significance levels at 1% and 5%, respectively.

	(1)	(2)	(3)	(4)
Constant	-3.591**	-5.133**	-5.054**	-1.991**
	(-5.389)	(-2.806)	(-3.779)	(-2.989)
LNAGE	-0.098			
	(-0.551)			
LNTA		0.074		
		(0785)		
LNSA			0.078	
			(1.072)	
INST				-4.432**
				(-4.534)
LVG	2.007**	1.916**	1.757**	1.783**
	(3.443)	(3.297)	(2.892)	(2.985)
CURR	1.627**	1.624**	1.628**	1.519**
	(6.509)	(6.451)	(6.461)	(5.931)
FCF	1.014	0.826	0.635	1.069
	(1.644)	(1.278)	(0.918)	(1.619)
CAPEX	-1.528	-1.344	-1.321	-1.071
	(-1.216)	(-1.047)	(-1.059)	(-0.709)
McFadden R^2	0.323	0.324	0.325	0.388
Wald Chi2	49.68	52.70	51.07	54.77
p-WChi2	0.000	0.000	0.000	0.000
Observations	258	258	258	258

In Table 4.6, I present the results of the estimation on my hypothesis concerning the joint association of information asymmetry and valuation and their effects on the likelihood of private equity takeover. I estimate this using Equation 3. Panels A, B and C show the estimates with EV, Q ratio and MTB separately.

Table 4.6: Measuring the Effect of Information Asymmetry and Valuation on Going Private

Table 4.6 shows the results of multivariate logit regression of information asymmetry variables and interaction terms on going private decisions. LNAGE is the natural log of the number of years between the firms' IPO and their being taken over. LNTA is the natural log of total assets. LNSA is the natural log of sales. INST is the number of ordinary shares held by the institutional holders expressed as percentage of total shares outstanding. EV is the enterprise value ratio calculated as enterprise value at time t divided by enterprise value at time t–2. Q Ratio is market capitalization divided by total assets. MTB is the market-to-book ratio calculated as market value of assets divided by the book value of assets. The interaction terms are interacted with the EV, Q ratio and MTB dummy variables, where these dummy variables take the value 1 if their corresponding value is greater than their mean value and 0 otherwise. These three dummy variables have been interacted with information asymmetry variables to determine their joint effect on PE takeovers. LVG is the leverage ratio calculated as total liabilities divided by total assets. CURR is the current ratio calculated as current assets divided by current liabilities. FCF is the free cash flow divided by total assets. Free cash flow is calculated as operating cash flow minus interest, taxes and dividends. CAPEX is the spending on new buildings, property and equipment minus depreciation, divided by the book value of total assets. Figures in the parentheses represent standard error of estimates. Results reported are heteroskedasticity consistent with ** and * denoting significance levels at 1% and 5%, respectively.

Panel A: Asymmetric Information, EV and Going Private

	(1)	(2)	(3)	(4)
Constant	-2.677**	1.784	-2.897*	1.992
	(0.847)	(2.199)	(1.399)	(3.008)
EV	-0.231	-2.882**	0.358*	-2.779*
	(0.272)	(0.998)	(0.405)	(1.278)
LNAGE	-0.132			
	(0.284)			
LNAGE*EV	-0.009			
	(0.102)			
LNTA		-0.260		
		(0.165)		
LNTA*EV		0.135*		
		(0.071)		
LNSA			-0.253*	
			(0.124)	
LNSA*EV			-0.141**	
			(0.0531)	
INST				-0.094*
				(3.194)
INST*EV				-2.295*
				(1.899)
LVG	1.821**	1.566*	2.146**	1.696**
	(0.663)	(0.627)	(0.743)	(0.602)
CURR	1.566**	1.674**	1.645**	1.583**
	(0.209)	(0.231)	(0.336)	(0.219)
FCF	0.872	0.554	0.959	0.735
	(0.604)	(0.644)	(0.708)	(0.622)
CAPEX	-1.601*	-2.041	-0.609	-1.724
	(0.911)	(1.506)	(1.297)	(1.274)
McFadden R^2	0.353	0.389	0.456	0.368
Wald Chi^2	64.41	55.66	57.95	66.41
p-$WChi^2$	0.000	0.000	0.000	0.000
Observation	258	258	258	258

Panel B: Asymmetric Information, Q ratio and Going Private

	(5)	(6)	(7)	(8)
Constant	-1.883	-4.976*	-4.774*	-2.421*
	(1.298)	(2.154)	(2.170)	(1.175)
Q Ratio	-1.600*	1.238	0.023*	0.099
	(0.784)	(0.836)	(0.893)	(0.369)
LNAGE	-0.579*			
	(0.331)			
LNAGE*Q	0.272			
	(0.242)			
LNTA		0.093		
		(0.117)		
LNTA*Q		-0.124*		
		(0.049)		
LNSA			0.085	
			(0.105)	
LNSA*Q			-0.057	
			(0.048)	
INST				-0.760
				(1.680)
INST*Q				-4.251*
				(1.825)
LVG	2.324*	2.295**	2.329*	1.624*
	(1.133)	(0.886)	(1.058)	(0.791)
CURR	1.875**	1.952**	1.902**	1.874**
	(0.338)	(0.369)	(0.344)	(0.416)
FCF	0.360	0.987	0.556	1.784
	(1.208)	(1.219)	(1.183)	(1.518)
CAPEX	2.376	1.823	2.076	4.181
	(2.247)	(2.189)	(2.298)	(2.844)
McFadden R^2	0.461	0.458	0.453	0.544
Wald Chi^2	45.17	43.62	41.48	42.46
p-WChi^2	0.000	0.000	0.000	0.000
Observation	258	258	258	258

Panel C: Asymmetric Information, MTB and Going Private

	(9)	(10)	(11)	(12)
Constant	-0.483 (2.270)	-22.12** (7.985)	6.215 (10.89)	-8.557 (8.684)
MTB	-2.655* (1.300)	-13.27** (5.120)	-8.737 (7.657)	-2.672* (4.233)
LNAGE	2.765* (1.245)			
LNAGE*MTB	-1.689* (0.767)			
LNTA		1.492** (0.497)		
LNTA*MTB		-1.096** (0.324)		
LNSA			-0.065 (0.557)	
LNSA*MTB			0.152 (0.386)	
INST				-51.94 (32.90)
INST*MTB				-42.92* (26.00)
LVG	2.697 (1.741)	3.704* (1.553)	2.100 (1.734)	6.531* (3.147)
CURR	1.869** (0.678)	2.193** (0.725)	2.028** (0.694)	3.054* (1.665)
FCF	2.659 (1.388)	3.221* (1.601)	1.613 (1.435)	2.615 (1.361)
CAPEX	1.064 (4.178)	0.846 (3.196)	1.981 (3.620)	10.20* (5.229)
McFadden R^2	0.821	0.819	0.893	0.827
Wald Chi^2	38.22	38.69	26.11	57.54
p-$WChi^2$	0.000	0.000	0.000	0.000
Observations	258	258	258	258

The strong evidence that one notices in Table 4.6 (Panels A, B and C) is that most interaction terms are strongly negative. In equation (3), estimates of β_1 and β_2 together measure the effect of information asymmetry conditional on valuation (EV, Q ratio or MTB) while the coefficient β_2 captures the additional affect due to valuation. In addition, EV, Q ratio and MTB appear to be mostly significant with a negative coefficient. Taking the INST as the illustrative information variable, the significant negative coefficient estimate of 2.295, 4.251 and 42.92, in Panels A, B and C respectively, on the interaction terms between INST and three valuation metrics (Models 4, 8 and 12; Table 4.6: Panels A, B and C) signify that firms with high valuation are unlikely to engage in private

equity transactions. Furthermore, given that the coefficients on INST in the same specifications are mostly statistically insignificant estimate, it is reasonable to suggest that the probability of private equity transaction is dominated more by the valuation measure than by the information variable of INST.

This pattern of estimate is repeated for the other information variables LNAGE, LNTA and LNSA in the other models in Panels A, B and C in Table 4.6. The valuation metric seems to dominate the information variables. Comparatively, the information variables (LNAGE, LNTA, LNSA and INST) have much less predictive probability associated with them. Nonetheless, among the information variables, LNSA and INST appear to be economically significant negative predictors, when they are used with EV as the valuation metric (Models 3 and 4). Taken overall, it is clear from the analyses that it is the valuation metrics that drive the going private transactions.

4.7 Further Analysis

In order to complement the analyses, data is stratified according to their valuation metrics. If valuation is the measure that drives private equity transactions, it should show a clearer picture when the data is separated into PE and non-PE firms. Accordingly, I sort the two groups of firms (PE and non-PE) and place them into five quintiles according to their EV, Q ratio and MTB. The results are tabulated in Table 4.7. Q1 represents the lowest value and Q5 represents the highest value of sample firms. In terms of EV, more than one-third of the PE target firms are in Q1, while only around four percent of the non-PE target firms are in the same lowest value quintile. Likewise, more than sixty percent of non-PE target firms lie in quintiles 4 and 5 (higher value) with only around fifteen percent of the PE target firms lying in the same higher value quintiles (4 and 5). A similar picture is found with Q ratio and MTB. The table shows a strong negative relationship between the valuations of firms and going private through PE takeovers, underlying the fact that undervaluation is an important driving factor in going private transactions.

Table 4.7: Undervaluation by Quintiles

This table compares the quintile distribution of 129 firms undergoing private equity transaction between 1990 and 2010 with a paired sample of Non-PE target firms during the same period. Firms are sorted into quintiles according to the valuation measures of EV, Q ratio and MTB. EV is the enterprise value ratio calculated as enterprise value at time t divided by enterprise value at time t–2. Q Ratio is market capitalization divided by total assets. MTB is the market-to-book ratio calculated as market value of assets divided by the book value of assets.

Quintile		Q 1	Q 2	Q 3	Q 4	Q 5	All Firms
Total Firms (N)		51	52	51	52	52	258
EV (expressed as a value)							
	Average	0.79	1.24	1.89	2.87	7.16	
PE	N	46	40	23	10	10	129
	%	35.66	31.01	17.83	7.75	7.75	
Non-PE	N	5	12	29	41	42	129
	%	3.88	9.3	22.48	31.78	32.56	
MTB (expressed as a value)							
	Average	0.65	1.13	1.61	2.96	7.47	
PE	N	51	49	27	2	0	129
	%	39.53	37.98	20.93	1.55	0	
Non-PE	N	0	3	25	49	52	129
	%	0	2.33	19.38	37.98	40.31	
Q-Ratio (expressed as a value)							
	Average	0.34	0.68	1.08	1.82	1.73	
PE	N	45	33	22	21	8	129
	%	34.88	25.58	17.05	16.28	6.21	
Non-PE	N	6	19	29	31	44	129
	%	4.65	14.73	22.48	24.03	34.11	

4.8 Conclusion

The current study is based on a unique hand-collected data of PEs and Non-PEs from various data sources during the period from 1990 to 2010. Particularly, this paper analyses the effect of information asymmetry and undervaluation on going private transactions through PE takeovers in the Australian context. It is found that firms taken over by PE firms are triggered due to market undervaluation, rather than information asymmetry. This evidence is new and adds to prior Australian studies (Eddey *et al.* 1996; Evans *et al.* 2005) in that I explicitly model the interplay between information asymmetry and undervaluation. The results of the predictive model reveal an inverse relationship between undervaluation and the firm's likelihood to go private. The analysis

suggests that private equity firms can play a role as active investors in enhancing and recognizing the performance of corporations when capital markets do not. In the end, given the evidence in this paper, it is probably reasonable to argue that the Qantas board and Chairperson were probably correct in their response to the takeover bid.

I also find the current ratio to be highly significant and positive in all regressions, revealing a strong positive relationship between liquidity and the likelihood of going private. This result is consistent with empirical literature suggesting that going private firms have a significantly higher level of liquidity (Carroll *et al.* 1988; Evans *et al.* 2005), although it is not consistent with Chapple *et al.*'s (2010) study on Australia. The results are somewhat surprising with regard to leverage ratio which is significant but takes on a positive value. This result is in contrast to the theory of financial slack as advanced by Jensen and Meckling (1976), but consistent with the opportunistic behaviour by private equity investors. Combined with the results regarding the effect of liquidity, this result suggests that private equity investors in Australia are opportunistic (Chapple *et al.* 2010) in taking advantage of financially distressed firms with low valuations. I did not find any evidence in support of free cash flows. This is not surprising in the sense that empirical evidence on the role of free cash flow in going private transactions is mixed. My analysis also suggests that capital expenditure is not an important driving factor in going private and this is consistent with prior UK and US empirical studies (Weir and Wright, 2006; Opler and Titman, 1993).

CHAPTER 5

MANAGERIAL OWNERSHIP, UNDERVALUATION AND PRIVATE EQUITY

5.1 Introduction

A prevalent belief that buyout transactions provide a way to improve target businesses has accelerated the trend for public corporations to go private (Fidrmuc *et al.* 2007). Going private transactions also can be designed to expropriate wealth from bondholders and outside shareholders to the insiders and new owners (Cumming *et al.* 2007). Literature suggests a number of incentive devices that can align the interest of shareholders and mangers so as to mitigate agency conflicts within target firms. As a whole, the role of managerial incentives in corporate control is an area that has received substantial attention from financial economists (Weir *et al.* 2005a). However, the link between managerial ownership of target firms and their likelihood of going private through PE deals has received little attention. In this study, the presence of high managerial ownership is examined as a determinant for a public firm going private and, in particular, being taken over by a PE firm. Using a sample of ASX takeover firms from 1990 to 2010, I test the proposition that high managerial ownership increases the likelihood of public firms going private through PE takeovers.

The fact that going private transactions can be a way to expropriate wealth from the majority shareholders and bondholders (Fidrmuc *et al.* 2007) stems from ineffective incentive devices resulting in a misalignment between insiders and outside shareholders. Therefore, managerial shareholding has an important impact on the alignment of interests between shareholders and managers. The shareholder welfare hypothesis suggests that management will act in the best interests of outside shareholders. On the other hand, the managerial welfare hypothesis argues that managers will act in the best interests of themselves (Walkling and Long, 1984). While Jensen and Meckling (1976) suggest that, with high ownership stakes, managers are more likely to be aligned with the interests of outside shareholders, Demsetz (1983) points out, when having a substantial equity, managers might have tendencies to guarantee their employment in order to retain control.

This is formalized as the entrenchment hypothesis by Morck *et al.* (1988). It is important to note also that firms with high managerial ownership are more costly to acquire and are less likely to be targeted in a traditional takeover attempt (Stulz, 1988). One reason is that managers may not like to be taken over by any hostile corporate raiders and this makes it harder for the acquirer to acquire the firm easily. Jensen (1989) claims that PE firms require managers to have a meaningful equity stake within their firm, increasing the likelihood that firms with high managerial ownership will be taken over by PE firms instead. The above literature, therefore, reveals that there remains much to be learnt about how managerial incentive alignment changes with levels of management shareholdings.

In the presence of substantial asymmetric information between insiders and outsiders, managers are likely to hold a large share of their firm's stock (Leland and Pyle, 1977; Opler and Titman, 1993). With sufficiently high equity stakes, managers may seek to maintain their control over the firm by choosing not to disseminate sufficient information about their firms to attract new shareholders. In such a situation, information on future growth opportunities of the firm is not efficiently transmitted. This suggests that high managerial ownership, including the presence of managerial private information, might create impetus for the managers to become entrenched (Brailsford *et al.* 2002; Florackis and Ozkan, 2009a). Agha (2011) argues that this happens because when managers are subject to strong monitoring levels, they initially behave in the best interests of shareholders for fear of being replaced. With high ownership stakes, managers are in full control and may be motivated to abuse their power. Filatotchev *et al.* (1999) find that managers are hostile towards outside ownership and want to retain control when they have high ownership stakes. Therefore, an increase in management shareholdings may be driven by, among other motivations, their efforts to preserve control. This argument provides further reason to suggest that managers with high ownership stakes have a strong incentive to take their firm private in order to maintain control. Regardless of the fact that high managerial ownership increases the likelihood of firms going private, as evidenced in the US and in the UK (Maupin *et al.* 1984; Maupin, 1987; Weir *et al.* 2005a), the extant research in this area within the Australian context has been limited. In particular, the empirical evidence on the significance of high managerial ownership in the private equity context remains an unexplored area. Therefore, in this study, high

managerial ownership is investigated as a rationale for going private through PE deals in the Australian context.

While high managerial ownership is hypothesized to increase the likelihood of going private, market undervaluation can also provide impetus for public corporations to go private (Weir *et al.* 2005b). The undervaluation problem is intensified with low analyst coverage and high investor uncertainty (Mehran and Peristiani, 2010). Renneboog and Simons (2005) argue that financial visibility is an important determinant in the decision to go private for public firms. The lack of sufficient analyst following and low share price as a result of undervaluation are further deepened when managers have high equity stakes. This situation, as a whole, is likely to provide incentives to both managers and private equity investors to take the firm private and capture the full value of their firm. Lowenstein (1985) concludes that PTP transactions are expected to eliminate asymmetric information and remove undervaluation. Later research also supports this result, suggesting that firm value increases after a re-organisation because managers might deliver better result with better control and closer monitoring (Kaplan and Stormberg, 2009). Therefore, the presence of information asymmetries may provide incentives for the managers to manipulate information to lower the value of the firm before they take their firm private. The anecdotal evidence of the private equity takeover attempt of Qantas in 2007 symbolizes managerial support in the face of market undervaluation. Facing the private takeover offer, the Qantas board recommended acceptance of the bid citing the low share price as the primary reason (Westcott, 2009).

The majority of extant literature on private equity uses US or UK samples. Although private equity investment in Australia have grown to a considerable level since the 1990s[7], no empirical studies have been conducted to examine the impact of high managerial ownership on PE deals using Australian data. Additional research in Australia is important also because it is unclear if the US and UK evidence can be applied in the Australian case. Therefore, an empirical study uncovering the relationship between managerial ownership and private equity deals in Australia provides a significant contribution to the corporate control literature. Apart from the Chapple *et al.* (2010) study exploring the characteristics of target firms in PE transactions, I am not

---

[7]Chapple *et al.* (2010) provide an exploratory study on features of Australian going private firms with a smaller number of observations.

aware of any research linking the relationship between high managerial ownership and the likelihood of Australian firms going private through PE takeovers. Using a sample of Australian PE target firms and comparing them with a set of firms that do not go private, I examine the proposition that high managerial ownership and low market valuation increase the likelihood of a public firm going private through PE takeovers. The analysis reveals that high managerial ownership is an important factor in the likelihood of firms going private through PE takeovers in Australia. In addition, I find that undervalued public firms are more likely to be involved in PE transactions in Australia. The remainder of this study is structured as follows: Section 2 provides a discussion on the interplay of managerial ownership, undervaluation and PE takeovers. Section 3 describes the data, sample selection process and methodological issues. The empirical results are reported in Section 4. Section 5 presents the conclusions.

5.2 Managerial Ownership, Undervaluation and Private Equity

The review of recent empirical evidence indicates that buyouts and PE transactions appear to be associated with incentive and governance mechanisms that enhance performance. This stems from the fact that incumbent management is likely to have information on how to improve firm performance (Kaplan and Stromberg, 2009). Stuart and Yim (2010) suggest that with high ownership stakes managers may have a strong incentive to increase their own wealth together with the controlling interest in the firm. One better way to do this is to take their firm private, enhance their performance and maximize their own benefit. Using a UK sample, Fidrmuc *et al.* (2007) also support the view that managers have incentives to take their firm private to enhance performance and in the process maximize their own benefit.

Public corporations are characterised by diffuse shareholdings, while management is vested in the hands of a small number of professionals (O'Sullivan and Wong, 1999). It is thus necessary to ensure that appropriate methods of internal governance exist to prevent executives from pursuing their own interests at the expense of outside shareholders. Jensen and Meckling (1976) argue that offering ownership stakes to managers should reconcile the interests of shareholders and managers since owner-managers are less likely to pursue non-value-maximizing behaviour. While owner-managers are expected to deliver value-maximizing outcomes, there is evidence that managers may become more entrenched with increased levels of ownership stakes.

Morck *et al.* (1988) argue that with low shareholdings by management, an increase in shareholdings may increase their motivation to work more closely for the improvement of shareholder wealth; but with larger shareholdings, an increase in shareholdings may induce management to become more entrenched. Therefore, managerial shareholdings create a trade-off between incentives and entrenchment. Consistent with this, Manry and Nathan (1999) find that large ownership stakes by managers may induce entrenchment. In addition, with a high level of ownership, managers may have incentives to transfer the resources of the firm to other companies under their full control (Filatotchev *et al.* 1999). It should be noted here that I do not observe the issue of entrenchment as a source of conflict in the present study, since I am not focusing on what happens to the managers after the firms are actually taken private.

To take a firm private, acquirers must have sufficient support from existing shareholders. High managerial ownership makes the acquisition process easier for the PE firms because mobilizing support for such transactions (Stuart and Yim, 2010) is comparatively simple. With high ownership stakes, managers are more likely to accept PE bids to maximize their own wealth while maintaining their controlling interest within the firm. A study by Maupin *et al.* (1984) also supports the idea that managers with high equity stakes are more likely to stage a PTP transaction for their own benefit. Increased managerial ownership tends to raise the financial gains of the managers through accepting a PE led bid (North, 2001). This should result in a positive relationship between managerial ownership and going private transactions. In addition, benefits of control can act as another key aspect in going private deals. Jensen (1989) argues that PE firms improve firm operations and create economic value by applying financial, governance and operational engineering to their companies. PE firms also require managers to make a meaningful investment in the company, so that managers have a considerable stake in the company's equity capital. This high equity stake reduces management's incentive to manipulate a company's performance (Kaplan, 1989) since this situation also ensures that management has more control over their firm.

Empirical evidence indicates that firms involved in PTP transactions have significantly higher managerial share ownership than those involved in traditional acquisitions (Maupin, 1987; Maupin *et al.* 1984; Halpern *et al.* 1999). A key feature in this evidence is that concentration of residual claims in the hands of decision makers makes a private

corporation more efficient (Fama and Jensen, 1983). Managers may invest a large amount of wealth in their firm because they value control or voting rights in their firm, which is consistent with entrenchment hypothesis. This idea suggests that managers with high ownership stakes will find going private an attractive vehicle to consolidate the firm's residual claims into their hands and simultaneously increase the efficiency of their firm. The evidence thus suggests that target firms in PTP deals have high managerial ownership. I therefore hypothesize that high managerial ownership increases the likelihood of firms going private through PE backed deals in Australia.

Proponents of PE transactions often claim that PE investors make proper use of the private information of management. This private information is not available in the market and is superior in the sense that with better incentives and closer monitoring, managers will be able to use the information and their knowledge to deliver better results (Kaplan and Stromberg, 2009). Since one key aspect of a firm's decision to stay public is to make information available to prospective investors, management may not accept the situation where information about future investment opportunities is not correctly transmitted. This may even lead to reversing the decision as to staying public or going private (Weir *et al.* 2005b) since information production and dissemination are very costly as explored by several information asymmetry models (Chemmanur and Fulghieri, 1999). If management believes that their firm is being undervalued, they may seek to realise some capital gains by taking their firm private. The information asymmetry between management and outside shareholders about the true and intrinsic value of the firm allows management to send a signal to the market by attempting a going private transaction (Evans *et al.* 2005).

With high information asymmetry, incumbent management may view continued listing costs as an unnecessary burden (Weir and Wright, 2006). DeAngelo *et al.* (1984) note that the costs of maintaining a stock exchange listing are very high and might even affect the profitability of the firm. Renneboog *et al.* (2007) suggest that the wealth gains from going private are largely the result of the elimination of direct and indirect costs associated with maintaining a stock exchange listing. Further, a delisting would enable management to operate without any public perception that the company is a poor performer (Weir and Wright, 2006). Empirical evidence in the UK (Weir *et al.* 2005b) also confirms that undervaluation is an important reason for going private because low

valuation makes it difficult to make use of the capital market for equity expansion. This raises questions about the actual benefits of being publicly quoted (Weir *et al.* 2005b). As a result, remaining public creates severe restrictions on a company's ability to compete. Firm valuation, thus, should be inversely related to the decision to go private. Therefore, it is hypothesized that undervaluation increases the likelihood of firms going private through PE firms in Australia.

Undervaluation is often considered to be an important driving force for private equity takeovers where there is high information asymmetry between insiders and outsiders (Bharat and Dittmar, 2010). While undervaluation is already in force, non-value maximizing behaviour resulting from high managerial ownership intensifies the problem for outside shareholders and investors (Manry and Nathan, 1999). This problem is particularly severe for firms with low market visibility and poor investor recognition. The likelihood of these less well-known firms going private is further enhanced with high managerial ownership because managers with high ownership put more value on their own utility maximization and consolidation of the residual claims on their hands (Halpern *et al.* 1999). The primary focus in this study is the role of high managerial ownership and undervaluation, which is likely to accelerate the invitation for private equity takeovers. It is argued, and tested empirically in this study, that firms that are undervalued and have managers with high ownership stakes are more likely to opt out of the public capital market and go private. While valuation might be a motivation for private takeovers, the level of managerial ownership may provide additional incentives to the managers to take their firm private. Therefore, I propose that the negative relation between undervaluation and the likelihood of private equity takeover is stronger at high levels of managerial ownership. This interaction between high managerial ownership and undervaluation in the context of private equity takeovers is the first to be examined applicable to the Australian going private literature. In this respect, this study potentially offers a more comprehensive and rigorous test of both the undervaluation and high managerial ownership hypotheses concerning private equity takeovers.

5.3 Data and Research Design

The sample consists of all successful going private transactions involving companies listed on the ASX and made between 1 January 1990 and 31 December 2010. The sample is formed by utilizing a variety of databases and resources. The initial sample of

all takeovers is collected from the SDC Platinum ANZ M&A Database. Initially a total of 517 successful going private bids are identified. I then screen the sample for bids involving an acquirer with a status of 'Joint Venture' or 'Subsidiaries'. The primary sample of going private bids are considered as a PE led bid only when it is financed wholly or partly by a PE firm to ensure that the firm has indeed become private and acquiring companies are not affiliated with public corporations. The going private transactions are then re-confirmed via the list of ASX delisted firms from the Aspect Huntley Morningstar DatAnalysis Database. The list of PE takeovers is then finalized and confirmed through the Bureau Van-Dijk ORBIS Global Database. This process yields a final sample of 129 firms. Annual accounting information was obtained from the Aspect Huntley Morningstar FinAnalysis database. Once the financial data are collected from FinAnalysis, the annual reports of those 129 PE target firms are downloaded from DatAnalysis database. Managerial ownership data are then retrieved from those annual reports on a company-by-company basis.

Table 5.1 Panel A provides the frequency distribution of all successful PTP deals in Australia. It shows that a total of 4546 completed takeovers took place in ASX. 517 completed going private deals were identified in Australia during the sample period, constituting around twelve percent of all completed takeovers. As is mentioned in Evans *et al.* (2005), approximately ten percent of all deals in Australia were going private deals. With steady increase, the going private deals have reached around twelve percent in recent times. Stromberg (2007) notes that, going private deals increased considerably after 2000. Table 5.1 suggests a similar evidence for Australia where the majority of PTP deals took place between 2001 and 2007.

Table 5.1 Panel B indicates the screening process in selecting the sample. Panel C classifies the PE takeover firms into various industry groupings showing the number of firms in each industry group. Prior Australian studies (Evans *et al.* 2005; Eddey *et al.* 1996) have suggested that the financial sector has the greatest number of going private deals in Australia. Chapple *et al.* (2010) find a very low concentration of Australian PE firms in the financial and mining sectors. The evidence in Table 5.1 Panel C contradicts Chapple *et al.* (2010) in terms of the mining sector, but shows a similar pattern for the financial sector. A possible reason for these variances can be the differences in the time period covered by these studies. It is apparent, however, that PE firms in Australia do not

concentrate in any particular industry sector and this is consistent with the idea that PE firms in Australia are 'opportunistic' and do not seem to concentrate on any particular industry sector for their target firms (Chapple *et al.* 2010).

Table 5.1: Private Equity Transactions in Australia 1990 – 2010

Panel A: Annual Frequency of all completed going private transactions

Year	All Non-PTP Deals		All Going Private		Only Private Equity	
	Number	Percent	Number	Percent	Number	Percent
1990 - 1992	171	4.24	11	2.13	0	0.00
1993 - 1995	340	8.44	34	6.58	1	0.77
1996 - 1998	462	11.47	40	7.74	5	3.88
1999 - 2001	341	8.46	51	9.86	19	14.73
2002 - 2004	777	19.29	93	17.98	33	25.58
2005 - 2007	799	19.83	133	25.73	52	40.31
2008 - 2010	1139	28.27	155	29.98	19	14.73
Total	4029	100%	517	100%	129	100%

Panel B: Private Equity Deals in Australia

		Sub-total	Total
All PTP Deals		517	
Less:	Acquirers or targets with status of 'Subsidiary' or 'Joint Venture'	95	422
Less:	Deals not financed (wholly/partly) by private equity firms	244	178
Less:	Information not available for the last 3 years	49	129
	Final Total of Private Equity deals		129

Panel C: Industry Concentration of Private Equity transactions

Industry	PE Deals	Industry	PE Deals
Mining	22	Transportation Services	4
Oil and Gas exploration	4	Communication Supplies/Services	12
Equipment Production/Supplies	7	Media, Audio/Video Distribution	8
Construction Services	7	Amusement/Recreation Services	7
Food, Drink and Kindered Products	6	Real Estate Investment	9
Firms, Dealers, Exchanges	8	Miscellaneous Trade	11
Financial Institutions	2	Business Services	13
Health and Allied Services	6	Hotels and Motels	4
	Total Completed PE Deals: 129		

A key aspect of the proposed hypotheses in this study is rationales of PE takeovers from an insider ownership and undervaluation perspective. To investigate the differences between the nature of PE takeovers and traditional takeovers, I also construct a matched sample of firms which are taken over in the public market via acquisition by publicly

listed firms and in which their assets stayed public. I term this set of firms as 'Non-PE' firms and use comparative analysis throughout the paper[8]. For each PE firm, I use a two-dimensional scoring method to match to a non-PE firm. I first match the PE firm in the same industry sector that had a public-to-public transaction and, secondly, in the same year as the PE firm.

The first set of regression involves testing the probability of going private with low and high levels of managerial shareholdings including valuation measures. I introduce the interaction terms to determine the joint effect of managerial ownership and valuation at different levels of managerial ownership. The effect of different levels of managerial shareholdings including undervaluation is tested through the logit regression form as follows:

$$L_i = Ln \ [P_i/(1-P_i)] = \alpha + \beta_1 LowMSO_i + \beta_2 Val_i + \beta_3 MSO_i * Val_i + \beta_4 Con_i + \varepsilon_i \qquad (1a)$$

$$L_i = Ln \ [P_i/(1-P_i)] = \alpha + \beta_1 HighMSO_i + \beta_2 Val_i + \beta_3 MSO_i * Val_i + \beta_4 Con_i + \varepsilon_i \qquad (1b)$$

The second set of regression involves testing the association between the levels of managerial shareholdings and firm valuation and this is examined through a cross sectional regression form as follows:

$$Val_i = \alpha + \beta_1 LowMSO_i + \beta_2 Con_i + \varepsilon_i \qquad (2a)$$

$$Val_i = \alpha + \beta_1 HighMSO_i + \beta_2 Con_i + \varepsilon_i \qquad (2b)$$

In logit regressions, PE_i, the dependent variable, is a dichotomous variable that takes the value 1 if the firm is taken over by PE firm and 0 otherwise. $LowMSO_i$, $HighMSO_i$ and Val_i are the low and high level of managerial shareholdings and valuation measures of a firm i respectively. Con_i represents a vector of control variables. The MSO variable simply measures the number of ordinary shares held directly and indirectly by the managers expressed as a percentage. I use three valuation metrics that are relevant in the private equity literature and thought to trigger private equity takeovers: Ratio of Enterprise Value (EV), Market-to-Book Ratio (MTB) and Q ratio. Following Weir *et al.* (2005b), I compute the ratio of enterprise value in year t to that in year t-2. Enterprise value is measured as market capitalization plus debt minus cash; this EV measures the relative change in valuation which is likely to act as a catalyst for private equity

---

[8]Matched samples have been used in studies of private equity transactions. See for example, Lehn and Poulsen (1989) and Weir *et al.* (2005a, 2005b).

takeovers. MTB measures stock price valuation relative to its intrinsic book value. Firms with low MTB are considered to be low growth firms. Following Evans *et al.* (2005), I also consider MTB as part of the valuation metric and believe that it can impact on the decision to go private. I measure MTB as the most recent available annual market value of the firm's equity plus debt divided by the book-value of assets. I also use Q ratio as another measure of valuation following Morck *et al.* (1988). Q ratio, a widely used measure of firm valuation, is calculated as market capitalization divided by total assets.

The control variables are drawn from prior literature of firm-specific accounting variables that may also contribute to the going private decision. Specifically, following Weir *et al.* (2005b) I select leverage ratio, current ratio, free cash flow and capital expenditure to be the control variables. Below is a list of the variables and their measurement.

Managerial Share Ownership (MSO): MSO measures the number of ordinary shares held directly and indirectly by the management and is calculated as the absolute number of ordinary shares held by management team divided by the total number of ordinary shares outstanding.

Enterprise Value Ratio (EV): EV is used as a measure of valuation. It is calculated as enterprise value at the year of takeover transaction, 't', divided by the enterprise value at time 't-2'. Enterprise value is measured as market capitalization plus debt minus cash.

Market-to-Book Ratio (MTB): MTB is used as the second measure of valuation. It is calculated as market value of the company divided by book value of the company's assets.

Q Ratio (Q-Ratio): Q ratio is used as the third measure of valuation. It is calculated as market capitalization divided by total assets.

Leverage (LVG): LVG is a measure of the debt condition of the firm. It is calculated as total liabilities divided by total assets.

Current ratio (CURR): CURR is a measure of the liquidity condition of the firm. It is calculated as current assets divided by current liabilities.

Free Cash Flow (FCF): FCF measures a company's relative free cash flow. Free cash flow is measured as operating cash flow minus interest, taxes and dividends. Relative FCF is found as free cash flow divided by total assets.

Capital Expenditure (CAPEX): CAPEX measures a company's net capital expenditure. It is defined as spending on new buildings, property and equipment minus depreciation, divided by the book value of total assets.

Finally, I use logistic regression to model a firm's decision to go private. In the second set of logit regressions, I test the joint effect of MSO and valuation measures on going private through PE takeovers as follows:

$$L_i = Ln\,[P_i/(1-P_i)] = \alpha + \beta_1 MSO_i + \beta_2 Val_i + \beta_1 MSO_i * Val_i + \beta_3 Con_i + \varepsilon_i \quad (3)$$

5.4 Univariate Results

Table 5.2 shows the results of univariate tests of the hypotheses that firms going private through PE takeovers have higher levels of managerial shareholdings and lower market valuations than firms acquired in the traditional manner. The mean values of MSO, EV, MTB and Q-ratio of PEs are significantly different from those of Non-PE target firms at the one percent level. In addition, the mean values of LVG and CURR of the PE sample show a significant difference from those of the Non-PE sample. The mean values of FCF and CAPEX for the PE and Non-PE samples are not significantly different from each other. The median test also shows a similar result for PE and Non-PE firms. The median values of MSO, EV, MTB, Q-ratio, LVG and CURR of PEs are also significantly different from those of Non-PE target firms at the one percent level. The results of t-tests and z-tests, therefore, support the hypotheses and show that Australian PE target firms have different firm attributes.

Table 5.2: Univariate Analysis of PE and Non-PE Samples

Table 5.2 shows the results of t-test and Wilcoxon rank-sum Mann-Whitney test to investigate if the mean and median values of different variables of PE and Non-PE sample target firms are significantly different from each other. The sample is drawn over the period from 1990 to 2010 and as in Table 5.1. MSO is the percentage of ordinary shares held by management. EV is the enterprise value ratio calculated as enterprise value at time t divided by enterprise value at time t–2. MTB is the market-to-book ratio calculated as market value of the firm divided by the book value of assets. Q Ratio is market capitalization divided by total assets. LVG is the leverage ratio calculated as total liabilities divided by total assets. CURR is the current ratio calculated as current assets divided by current liabilities. FCF is the free cash flow divided by total assets. Free cash flow is calculated as operating cash flow minus interest, taxes and dividends. CAPEX is the spending on new buildings, property and equipment minus depreciation, divided by the book value of total assets. ** indicates $p < 0.01$ and * indicates $p < 0.05$.

	Mean				Median			
	PE	Non-PE	t-stat	p-value	PE	Non-PE	z-stat	p-value
MSO	0.141	0.041	-7.27**	0.000	0.085	0.032	-7.61**	0.0010
EV	2.009	3.586	4.60**	0.000	1.163	2.725	8.82**	0.000
MTB	1.034	4.508	9.10**	0.000	1.050	3.330	13.33**	0.000
Q-Ratio	1.026	3.656	4.32**	0.000	0.669	1.736	7.79**	0.000
LVG	0.496	0.380	-2.91**	0.002	0.465	0.336	-3.64**	0.000
CURR	4.095	1.332	-3.32**	0.000	2.25	1.23	-8.80**	0.000
FCF	0.100	0.037	-1.45	0.074	0.104	0.093	-0.57	0.569
CAPEX	0.085	0.109	1.07	0.142	0.041	0.041	0.20	0.845

5.5 Multicollinearity Test

High correlations among independent variables can indicate the possibility of multicollinearity which means that the resultant analysis may not give valid results about individual predictors. As a result, variables having multicollinearity should not be included in the same regression equation (Gujarati, 2005). Table 5.3 shows the correlation matrix for the independent variables generated through the Spearman and Pearson correlation methods. The correlation coefficient between MTB and CURR is -0.495; and that between Q-ratio and CAPEX is 0.588; while correlation coefficient between Q-ratio and FCF is -0.641. These values might indicate the existence of a slight multicollinearity between the variables. Gujarati (2005) argues that slight multicollinearity would not pose any statistical problem as long as the correlation between independent variables in a model is lower than the correlation between each of the independent and dependent variables. The correlation coefficient of 0.791 between MTB and Q-ratio seems to be very high and accordingly would not be used in the same regression. The correlation matrix does not exhibit any other significantly high level of correlation among the independent variables. Accordingly, it is not needed to exclude any of the other variables from our models.

Table 5.3: Correlation among Independent Variables

Table 5.3 shows the correlation coefficients among the independent variables. The top diagonal numbers are Spearman correlation coefficients, while the bottom diagonal numbers are Pearson correlation coefficients. MSO is the percentage of ordinary shares held by management. EV is the enterprise value ratio calculated as enterprise value at time t divided by enterprise value at time t–2. MTB is the market-to-book ratio calculated as market value of the firm divided by the book value of assets. Q Ratio is market capitalization divided by total assets. LVG is the leverage ratio calculated as total liabilities divided by total assets. CURR is the current ratio calculated as current assets divided by current liabilities. FCF is the free cash flow divided by total assets. Free cash flow is calculated as operating cash flow minus interest, taxes and dividends. CAPEX is the spending on new buildings, property and equipment minus depreciation, divided by the book value of total assets.

	MSO	EV	MTB	Q_RATIO	LVG	CURR	FCF	CAPEX
MSO	1	-0.342	-0.393	-0.217	0.092	0.376	0.007	0.028
EV	-0.149	1	0.425	0.234	-0.165	-0.295	-0.056	0.007
MTB	-0.211	0.166	1	0.613	-0.209	-0.495	0.013	0.113
Q_RATIO	-0.117	0.049	0.791	1	-0.398	-0.217	-0.124	0.235
LVG	0.079	-0.094	0.031	-0.046	1	-0.024	0.217	-0.149
CURR	0.101	-0.079	-0.105	-0.043	-0.035	1	-0.091	0.068
FCF	0.059	-0.029	-0.452	-0.641	-0.031	-0.043	1	0.039
CAPEX	0.021	-0.036	0.362	0.588	-0.022	-0.001	-0.358	1

5.6 MSO and Undervaluation by Quintile

In Table 5.4, data is stratified according to their MSO and valuation measures. I sort the two groups of firms (PE and non-PE) and place them into five quintiles based on their MSO, MTB, EV and Q-ratio. The results are produced in Table 5.4. Q1 represents the lowest value and Q5 represents the highest value of MSO, MTB, EV and Q-ratio of sample firms. With respect to MSO, only around ten percent of the PE target firms are in Q1 while around thirty percent of the Non-PE target firms are included in the same lowest value Q1. Likewise, around sixty percent of the PE target firms are in higher value Q4 and Q5 while only around twenty percent of the Non-PE target firms are included in the same higher value Q4 and Q5. In terms of EV ratio, more than one-third of the PE target firms are in Q1, while less than five percent of the non-PE target firms are in the same lowest value Q1. A similar picture is portrayed with respect to MTB and Q-ratio. The quintile analysis, therefore, shows a positive relationship between MSO and going private; while a negative relationship is found between the valuations of firms and going private through PE takeovers. These results provide some initial evidence that MSO and undervaluation are important factors in the decision to go private through PE deals in Australia.

Table 5.4: MSO and Undervaluation by Quintiles

This table compares the quintile distribution of 129 firms undergoing private equity transaction between 1990 and 2010 with a paired sample of Non-PE target firms during the same period. Firms are sorted into quintiles based on MSO and valuation measures of EV, MTB and Q Ratio. MSO is the percentage of ordinary shares held by management. EV is the enterprise value ratio calculated as enterprise value at time t divided by enterprise value at time t–2. MTB is the market-to-book ratio calculated as market value of the firm divided by the book value of assets. Q ratio is market capitalization divided by total assets.

Quintile		Q 1	Q 2	Q 3	Q 4	Q 5	All Firms
Total Firms (N)		51	52	51	52	52	258
MSO (expressed as a %)							
	Average	0.01	0.03	0.05	0.09	0.27	
PE	N	13	15	22	31	48	129
	%	10.08	11.63	17.05	24.03	37.21	
Non-PE	N	38	37	29	21	4	129
	%	29.46	28.68	22.48	16.27	3.11	
EV (expressed as a value)							
	Average	0.79	1.24	1.89	2.87	7.16	
PE	N	46	40	23	10	10	129
	%	35.66	31.01	17.83	7.75	7.75	
Non-PE	N	5	12	29	41	42	129
	%	3.88	9.3	22.48	31.78	32.56	
MTB (expressed as a value)							
	Average	0.65	1.13	1.61	2.96	7.47	
PE	N	51	49	27	2	0	129
	%	39.53	37.98	20.93	1.55	0	
Non-PE	N	0	3	25	49	52	129
	%	0	2.33	19.38	37.98	40.31	
Q-Ratio (expressed as a value)							
	Average	0.34	0.68	1.08	1.82	1.73	
PE	N	45	33	22	21	8	129
	%	34.88	25.58	17.05	16.28	6.21	
Non-PE	N	6	19	29	31	44	129
	%	4.65	14.73	22.48	24.03	34.11	

5.7 Levels of MSO and PE Takeovers

It is hypothesized that high managerial ownership accelerates the decision to go private. In such a situation, managers will be motivated to ensure full control over their firm. One way to do it is to accept any going private offer from PE firms since PE firms require the management to make a meaningful investment within their firm (Jensen, 1989). With a view to determining the effect of low and high managerial shareholdings on PE takeovers, the sample firms are separated into low and high MSO groups. First, 129 PE target firms are sorted into low and high MSO groups according to their median value.

Likewise, 129 Non-PE target firms are also divided into low and high MSO groups according to their median value. The low MSO groups from PE and Non-PE target firms are then combined to form low MSO target firms, while the high MSO groups from PE and Non-PE target firms are then combined to form high MSO target firms. As a result, 258 sample target firms are again divided into 129 low MSO target firms and 129 high MSO target firms. Table 5.5 portrays and compares the summary statistics of low and high MSO target firms. The mean value of MSO in low MSO group is 3.2 percent, while the mean value of MSO in high MSO group is 9.6 percent.

Table 5.5: Summary Statistics of Low and High MSO Target Firms

This table compares the summary statistics of low and high MSO target firms. 129 PE target firms are divided into low and high MSO groups according to their median value. Likewise, 129 Non-PE target firms are divided into low and high MSO groups according to their median value. The low MSO groups from PE and Non-PE target firms are then combined to form low MSO target firms, while the high MSO groups from PE and Non-PE target firms are then combined to form high MSO target firms. MSO is the percentage of ordinary shares held by management. EV is the enterprise value ratio calculated as enterprise value at time t divided by enterprise value at time t–2. MTB is the market-to-book ratio calculated as market value of the firm divided by the book value of assets. Q Ratio is market capitalization divided by total assets. LVG is the leverage ratio calculated as total liabilities divided by total assets. CURR is the current ratio calculated as current assets divided by current liabilities. FCF is the free cash flow divided by total assets. Free cash flow is calculated as operating cash flow minus interest, taxes and dividends. CAPEX is the spending on new buildings, property and equipment minus depreciation, divided by the book value of total assets.

	Low MSO Group			High MSO Group			Total
	Mean	Median	SD	Mean	Median	SD	
MSO	0.032	0.024	0.022	0.151	0.096	0.148	
EV	2.792	1.981	2.679	2.802	1.755	3.048	
MTB	2.885	1.57	4.097	2.657	1.57	2.841	
Q-Ratio	2.335	1.074	6.014	2.348	1.162	3.897	
LVG	0.455	0.419	0.363	0.419	0.438	0.281	
CURR	2.933	1.43	9.027	2.494	1.72	3.378	
FCF	0.061	0.113	0.379	0.0762	0.098	0.319	
CAPEX	0.091	0.043	0.158	0.103	0.039	0.204	
Observations		129			129		258

I now use the logit specification of Equation 1 to estimate the probability of PE takeovers with low and high levels of MSO. Table 5.6 presents the results of the estimates with Panel A showing the impact of low MSO and Panel B showing the impact of high MSO. Panel A of Table 5.6 shows that even at a low level, MSO is significant and positive at the one percent level (Model 1). Among the valuation measures, both MTB and Q ratio

are significant and negative. Panel B shows that at high levels of managerial shareholdings, MSO is significant and positive at the one percent level (Model 7). This positive estimate remains significant across all regressions. MTB and Q ratios are again significant and negative. I also include a set of dummy variables of valuation measures and their interaction terms with MSO both at low and high levels. Except for MSO*EV, none of the other interaction terms are significant. The results from Panel A and B of Table 5.6 suggest that low valuation and high managerial ownership drive the public firms' going private decisions. However, I do not find any evidence that the negative association between firm valuation and going private intensifies at high levels of managerial shareholdings since the interaction terms are not consistently significant.

5.8 Levels of MSO and Firm Value

While the convergence of interest hypothesis (Jensen and Meckling, 1976) suggests a uniform positive relationship between management equity stakes and firm value, entrenchment hypothesis predicts that firm valuation can be adversely affected through a significantly high degree of management ownership (Morck *et al.* 1988). Therefore, it is difficult to predict the actual relationship between management equity stakes and firm value only on the basis of theoretical arguments. This section is devoted to the analysis of this conflicting theoretical prediction of managerial shareholdings and firm value using cross sectional regressions. Initially, Table 5.7a shows a comparison of market valuation and different levels of managerial shareholdings of 258 Australian PE and Non-PE target firms. Following Morck *et al.* (1988) and Weir *et al.* (2005a), I use Q ratio as a proxy for market valuation of the target firms. Table 5.7a clearly shows Q ratio is increasing with MSO. This positive relationship remains until MSO reaches approximately ten percent at which stage Q ratio decreases with increasing MSO. This result therefore suggests a non-linear relationship between MSO and firm value. This result is reproduced in Figure 5.1, below, which captures the effect of the convergence of interest and entrenchment hypothesis. Thus, firm value rises with increasing MSO until the range of ten percent and firm value starts declining once MSO rises over ten percent. This non-linearity in managerial shareholdings is consistent also with previous empirical studies by Manry and Nathan (1999) and Morck *et al.* (1988).

Table 5.6: Logit Regression of Low and High MSO on PE Takeovers

Table 5.6 shows the results of multivariate logit regression of Low and High MSO on PE takeovers. 129 PE target firms are divided into low and high MSO groups according to their median value. Likewise, 129 Non-PE target firms are also divided into low and high MSO groups according to their median value. The low MSO groups from PE and Non-PE target firms are then combined to form low MSO target firms, while the high MSO groups from PE and Non-PE target firms are then combined to form high MSO target firms. MSO is the percentage of ordinary shares held by management. EV is the enterprise value ratio calculated as enterprise value at time t divided by enterprise value at time t–2. MTB is the market-to-book ratio calculated as market value of the firm divided by the book value of assets. Q ratio is market capitalization divided by total assets. A set of dummy variables on valuation measures have been generated and they take the value 1 if their corresponding value is greater than their median value and 0 otherwise. These three dummy variables are then interacted with MSO to determine their joint effect on PE takeovers. LVG is the leverage ratio calculated as total liabilities divided by total assets. CURR is the current ratio calculated as current assets divided by current liabilities. FCF is the free cash flow divided by total assets. Free cash flow is calculated as operating cash flow minus interest, taxes and dividends. CAPEX is the spending on new buildings, property and equipment minus depreciation, divided by the book value of total assets. Figures in parentheses represent standard error of estimate. Results reported are heteroskedasticity consistent. ** indicates $p < 0.01$ and * indicates $p < 0.05$.

Panel A: Logit Regression of Low MSO on PE Takeovers

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Constant	-5.133**	6.523	-4.253**	-4.490**	17.09	-5.141**
	(1.012)	(6.081)	(1.28)	(1.127)	(12.45)	(1.268)
MSO	97.95**	202.7	106.1**	132.2**	179.4	99.39**
	(21.49)	(117.5)	(28.59)	(32.01)	(97.91)	(28.11)
EV		-0.23	-0.254	-0.015		
		(0.314)	(0.146)	(0.13)		
MSO*EV				-79.57**		
				(27.49)		
MTB		-14.69*			-22.10	
		(6.767)			(11.39)	
MSO*MTB					236.6	
					(217.9)	
Q-ratio			-0.649**			-0.743*
			(0.227)			(0.291)
MSO*Q-ratio						11.08
						(28.98)
LVG	1.267	4.386	1.726	0.915	1.439	2.095*
	(0.75)	(4.71)	(1.038)	(0.899)	(5.177)	(1.024)
CURR	1.077**	5.578	1.346**	0.975**	5.429	1.411**
	(0.308)	(3.1)	(0.371)	(0.32)	(3.019)	(0.399)
FCF	2.011	16.02	1.751	1.541	16.83*	1.886
	(1.17)	(8.648)	(1.484)	(1.29)	(8.524)	(1.516)
CAPEX	-3.631	-5.656	-2.513	-3.178	-4.347	-1.553
	(3.406)	(8.004)	(4.207)	(3.584)	(8.191)	(4.03)
McFadden R^2	0.46	0.92	0.56	0.54	0.93	0.54
LR stat	81.44	164.09	99.40	95.89	165.47	96.09
p-LR stat	0.000	0.000	0.000	0.000	0.000	0.000
Observation	129	129	129	129	129	129

Panel B: Logit Regression of High MSO on PE Takeovers

Variables	(7)	(8)	(9)	(10)	(11)	(12)
Constant	-13.88**	-13.65**	-12.42**	-17.83**	-13.93**	-12.56*
	(3.658)	(4.16)	(4.421)	(5.915)	(4.849)	(5.295)
MSO	72.91**	86.43**	78.44**	112.2**	97.67**	83.62**
	(18.94)	(23.95)	(25.32)	(38.26)	(31.61)	(32.12)
EV		0.0775	0.004	0.152		
		(0.11)	(0.105)	(0.133)		
MSO*EV				-38.05*		
				(14.98)		
MTB		-1.803*			-5.115*	
		(0.782)			(2.336)	
MSO*MTB					55.23	
					31.78	
Q-ratio			-2.821*			-4.201*
			(1.108)			(1.788)
MSO*Q-ratio						27.98
						(16.51)
LVG	4.575*	5.295	1.909	5.047	8.759*	-0.184
	(2.199)	(3.277)	(2.903)	(3.218)	(4.219)	(3.604)
CURR	2.438**	2.729**	3.256**	3.282**	3.182**	3.529**
	(0.827)	(0.971)	(1.123)	(1.234)	(1.129)	(1.342)
FCF	1.415	6.504	6.832	0.587	9.412	6.166
	(4.529)	(5.357)	(3.675)	(4.621)	(4.29)	(2.06)
CAPEX	-3.034	-4.311	-1.75	-1.942	-5.659	2.056
	(4.817)	(7.507)	(6.582)	(4.214)	(6.235)	(7.252)
McFadden R^2	0.80	0.86	0.86	0.86	0.88	0.88
LR stat	142.69	152.81	153.32	153.65	156.59	157.47
p-LR stat	0.000	0.000	0.000	0.000	0.000	0.000
Observation	129	129	129	129	129	129

Table 5.7a: MSO and Firm Value

Table 5.7a shows the relationship between firm value, as proxied by Q-ratio and the level of managerial shareholdings. MSO is the percentage of ordinary shares held by management. Q ratio is market capitalization divided by total assets.

| MSO (%)	Number of Firms			Mean-Q
	PE	Non-PE	Total	
0 - < 1%	5	0	5	0.6203
1% - < 2%	7	37	44	2.2564
2% - < 3%	12	25	37	3.8587
3% - < 4%	6	21	27	2.7063
4% - < 5%	4	10	14	2.6089
5% - < 7%	18	13	31	3.0867
7% - < 10%	21	17	38	2.4091
10% - < 15%	18	5	23	1.0787
15% - 25%	17	1	18	1.0914
25% - < 40%	10	0	10	0.9696
40% and over	11	0	11	0.7204
Total	129	129	258	2.3413

Figure 5.1 MSO and Firm Value

Figure 5.1 shows the relationship between firm value, as proxied by Q-ratio and the level of managerial shareholdings. MSO is the percentage of ordinary shares held by management. Q ratio is market capitalization divided by total assets.
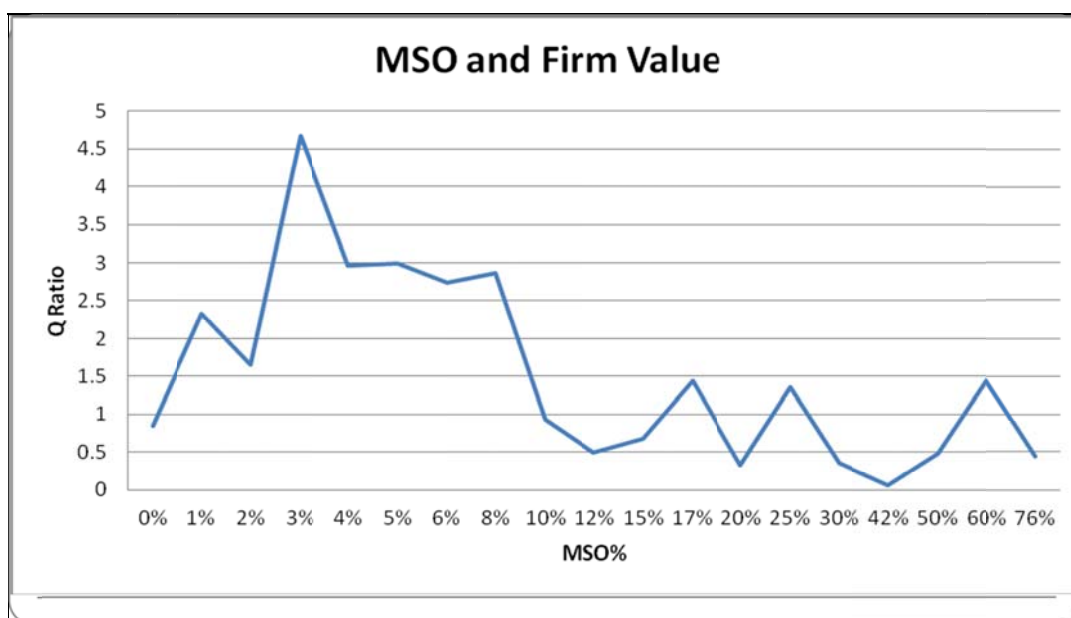
To capture the possible existence of convergence-of-interest and entrenchment, further analysis is conducted through estimating cross sectional regressions using Equation 2. Table 5.7b presents the results of OLS regressions of low and high MSO on firm value. I employ three different OLS regressions on EV, MTB and Q-ratio for low and high MSO group as well as with the whole sample. For the purpose of analyzing the non-linearity in MSO, I also utilize a quadratic form of the MSO variable. The coefficient of MSO variable is negative throughout, and is significant with high MSO and with whole sample. This result indicates that MSO affects firm valuation negatively at high levels of MSO and this is consistent with the managerial entrenchment hypothesis. The coefficient of MSO^2 variable takes on the opposite sign and is significant with high MSO and with whole sample. This is an indication of the possible existence of a non-linear association between MSO and firm value. This result supports those found in Table 5.7a and Figure 5.1 which provide evidence of a non-linear association between MSO and firm value. This evidence is new in the Australian context and is similar to those of US firms (Manry and Nathan, 1999; Morck *et al.* 1988) in respect of managerial entrenchment.

Table 5.7b: OLS Regression of Low and High MSO on Firm Valuation

Table 5.7b shows the results of OLS regression of Low and High MSO on firm value. 129 PE target firms are divided into low and high MSO groups according to their median value. Likewise, 129 Non-PE target firms are divided into low and high MSO groups according to their median value. The low MSO groups from PE and Non-PE target firms are then combined to form low MSO target firms, while the high MSO groups from PE and Non-PE target firms are then combined to form high MSO target firms. EV, MTB and Q-ratio are used as valuation ratios and thereby as dependent variables in the specifications. MSO is the percentage of ordinary shares held by management. LVG is the leverage ratio calculated as total liabilities divided by total assets. CURR is the current ratio calculated as current assets divided by current liabilities. FCF is the free cash flow divided by total assets. Free cash flow is calculated as operating cash flow minus interest, taxes and dividends. CAPEX is the spending on new buildings, property and equipment minus depreciation, divided by the book value of total assets. Figures in parentheses represent standard error of estimate. Results reported are heteroskedasticity consistent. ** indicates $p < 0.01$ and * indicates $p < 0.05$.

Variables	Low MSO Group			High MSO Group			Whole Sample		
	EV	MTB	Q-Ratio	EV	MTB	Q-Ratio	EV	MTB	Q-Ratio
Constant	3.562**	3.097**	1.655	4.155**	5.120**	4.395**	3.814**	3.506**	2.801**
	(0.883)	(0.925)	(0.982)	(0.66)	(0.551)	(0.674)	(0.389)	0.404	(0.457)
MSO	19.19	-92.43	-35.37	-12.35	-19.19**	-15.30*	-7.623*	-15.68**	-10.64*
	(48.18)	(50.47)	(53.56)	(6.315)	(5.271)	(6.448)	(4.058)	(4.208)	(4.766)
MSO^2	-541.7	471.9	106.01	13.63	22.29**	18.14*	8.357	18.91**	12.92*
	(546.3)	(572.3)	(607.3)	(9.484)	(7.916)	(9.685)	(6.959)	(7.217)	(8.174)
LVG	-0.959	2.229**	0.669	0.204	-0.975	-2.024*	-0.754	0.463	-0.685
	(0.668)	(0.669)	(0.773)	(0.996)	(0.831)	(1.017)	(0.549)	(0.57)	(0.645)
CURR	-0.025	-0.021	-0.016	-0.015	-0.046	-0.061	-0.029	-0.0499	-0.041
	(0.026)	(0.027)	(0.029)	(0.087)	(0.073)	(0.089)	(0.026)	(0.027)	(0.031)
FCF	-0.464	-2.724**	-7.283**	-0.22	-1.859*	-3.981**	-0.391	-3.650**	-7.116**
	(0.776)	(0.813)	(0.862)	(0.864)	(0.721)	(0.882)	(0.544)	(0.564)	(0.639)
CAPEX	-0.458	13.54**	20.21**	-1.264	0.965	7.278**	-0.822	4.568**	11.45**
	1.856	(1.944)	(2.063)	(1.339)	(1.118)	(1.368)	(1.042)	(1.08)	(1.224)
R-squared	0.09	0.57	0.78	0.06	0.25	0.41	0.04	0.32	0.58
F stat	2.01	27.28	70.76	1.37	6.73	13.70	1.84	19.53	56.90
p-F stat	0.071	0.000	0.000	0.231	0.000	0.000	0.092	0.000	0.000
Observations	129	129	129	129	129	129	258	258	258

5.9 MSO, Undervaluation and PE Takeovers

I now use the logit specification of Equation 3 to estimate the probability of going private through PE takeovers. Table 5.8 presents the estimation of logit regressions to measure the effect of MSO and valuation measures on PE takeovers. I also include a set of dummy variables of valuation measures and their interaction terms with MSO. The estimates show that MSO is positive and significant in all regressions even after the model is controlled for different valuation measures and their corresponding interaction terms with MSO. This result validates the hypothesis and I find that the probability of PE takeover increases with increasing MSO.

Table 5.8: Logit regression of MSO and Valuation on PE takeovers

Table 5.8 shows the results of multivariate logit regression of MSO and valuation measures on PE takeovers. MSO is the percentage of ordinary shares held by management. EV is the enterprise value ratio calculated as enterprise value at time t divided by enterprise value at time t–2. MTB is the market-to-book ratio calculated as market value of the firm divided by the book value of assets. Q ratio is market capitalization divided by total assets. A set of dummy variables on valuation measures have been generated and they take the value 1 if their corresponding value is greater than their median value and 0 otherwise. These three dummy variables are then interacted with MSO to determine their joint effect on PE takeovers. LVG is the leverage ratio calculated as total liabilities divided by total assets. CURR is the current ratio calculated as current assets divided by current liabilities. FCF is the free cash flow divided by total assets. Free cash flow is calculated as operating cash flow minus interest, taxes and dividends. CAPEX is the spending on new buildings, property and equipment minus depreciation, divided by the book value of total assets. Figures in parentheses represent standard error of estimate. Results reported are heteroskedasticity consistent. ** indicates $p < 0.01$ and * indicates $p < 0.05$.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Constant	-4.610** (0.649)	12.54** (3.931)	-3.364** (0.817)	-4.581** (0.743)	9.054* (3.921)	-4.023** (0.786)
MSO	20.56** (4.371)	55.24** (17.39)	18.82** (4.645)	36.47** (6.795)	46.69* (20.88)	20.30** (5.743)
EV		-0.377** (0.146)	-0.163** (0.832)	0.0196 (0.0734)		
MSO*EVD				-30.55** (7.25)		
MTB		-12.11** (3.104)			-10.44** (3.094)	
MSO*MTBD					2.446 (19.26)	
Q-Ratio			-0.813** (0.207)			-0.764** (0.227)
MSO*QRATD						-4.398 (6.37)
LVG	1.925** (0.584)	1.032 (2.086)	2.199** (0.766)	1.827** (0.633)	2.064 (1.951)	2.259** (0.758)
CURR	1.354** (0.241)	1.974** (0.626)	1.530** (0.287)	1.343** (0.257)	1.873** (0.602)	1.593** (0.295)
FCF	1.083 (0.68)	7.958*** (2.795)	0.328 (1.057)	0.905 (0.732)	6.369** (2.446)	0.409 (1.035)
CAPEX	-1.696 (1.545)	-4.017 (4.859)	0.38 (2.453)	-2.354 (2.02)	-1.332 (4.445)	1.094 (2.425)
McFadden R^2	0.43	0.89	0.54	0.51	0.87	0.53
LR stat	155.29	318.64	192.2	182.39	312.74	187.88
p-LR stat	0.000	0.000	0.000	0.000	0.000	0.000
Observation	258	258	258	258	258	258

All three valuation measures are negative and significant without the interaction terms, while the interaction term is significant only with the EV dummy variable. This result again validates my hypothesis in that valuation measures are also important driving forces in going private deals. The negative association between the probability of private equity transaction and valuation measures captures the magnitude of this association showing increasing motivation of the PE investors to engage in transactions of firms with low market valuation. Since the interaction terms between MSO and valuation measures

are not consistently significant, I am not certain that high MSO and undervaluation jointly increase the likelihood of firms going private in Australia. Amongst the control variables, LVG and CURR variables appear to be strong predictors of private equity transactions. High leverage indicates an unhealthy financial condition which may be a characteristic for which the private equity investors look for to opportunistically capture the underlying value of the firm. A high current ratio is an indication of high liquidity; a factor attractive for any takeover especially private equity investment.

5.10 Further Analysis

The decision to go private through PE firms in Australia is further investigated by assigning probabilities to going private decision with different levels of MSO and firm value (Weir *et al.* 2005a). The total number of completed ASX takeovers between 1990 and 2010 is 4546. The number of PE takeovers within this time period is 178 ($129 + 49 =$ 178; completed information on the 49 PE target firms are not available and hence are not included in the sample for analysis purpose). The 178 private equity takeovers constitute a 3.92 percent of the takeover (178/4546) population within the sample period. To reduce sampling bias, the coefficient of the constant term (a logit regression is employed using all the variables) should be adjusted, where the adjustment term should be [ln (1) – ln (0.0392)] = 3.24. As such, the constant term should be reduced by 3.24 and is expected to overcome sampling bias. I use the following equation to calculate the probability of going private at different levels of MSO and valuation measures (Maddala, 1991):

$$P_1 = \frac{1}{1 + e^{Zi}}$$

Inserting the mean values of the variables into the logit regression result gives an overall probability of going private of 0.0000001045. Table 5.9 depicts the probability of going private through PE firms for different levels of MSO and the valuation measures with other variables measured at their means. The table shows that probability of going private through PE firms in Australia is increasing with MSO and decreasing with firm valuation; the relationship that already been explored earlier through empirical analysis. This table shows that for managerial shareholdings up to twenty five percent, probability is quite low at less than one percent. At fifty percent shareholdings, probability of going private jumps up to close to one, ceteris paribus. This increased probability of going private is consistent with strong financial incentive effects at high shareholdings by

management as suggested by Weir *et al.* (2005a). With the valuation measures, the probability of going private is very high at low valuation. This is more prominent with MTB and Q ratio, than with EV.

Table 5.9: Probability of Going Private with MSO and Valuation

Table 5.9 shows the probability of going private through PE firms for different levels of managerial shareholdings and different values of valuation measures. MSO is the percentage of ordinary shares held by management. EV is the enterprise value ratio calculated as enterprise value at time t divided by enterprise value at time t–2. MTB is the market-to-book ratio calculated as market value of the firm divided by the book value of assets. Q ratio is market capitalization divided by total assets.

MSO (%)	Probability (MSO)	Value (EV, MTB, Q)	Probability (EV)	Probability (MTB)	Probability (Q-ratio)
5%	8.9e-09	0.50	2.84e-07	0.999773	4.15e-07
10%	1.78e-07	1.00	2.28e-07	0.999703	2.85e-07
15%	3.53e-06	1.50	1.84e-07	0.795817	1.96e-07
20%	7.02e-05	2.00	1.48e-07	0.004084	1.35e-07
25%	0.001395	2.50	1.19e-07	4.31e-06	9.28e-08
30%	0.027033	3.00	9.57-e08	4.5e-09	6.38e-08
50%	0.99777	3.50	7.69e-08	4.0e-12	4.39e-08

5.11 Conclusion

The current study is based on unique hand-collected data of PEs and Non-PEs from various data sources during the period from 1990 to 2010. It analyses the effect of high managerial ownership and undervaluation on the decision to go private through PE takeovers in the Australian context. I find that firms taken over by PE firms exhibit both high managerial ownership and market undervaluation. This evidence is new and expands upon prior Australian studies (such as Eddey *et al.* 1996 and Evans *et al.* 2005) in that I explicitly model the interplay between managerial shareholdings and undervaluation. I do not find any evidence that undervaluation works as a stronger driving force in PE deals at high level of MSO. The results of the predictive model reveal a strong positive relationship between MSO and the firm's likelihood to go private and an inverse relationship between undervaluation and the firm's likelihood to go private. Consistent with prior empirical evidence, the analysis also reveals a possible existence of a non-linear relationship between firm value and managerial shareholdings in Australian target firms.

I find current ratio to be highly significant and positive, revealing a strong positive relationship between liquidity and the likelihood of going private. This result is consistent with empirical literature suggesting that going private firms have a significantly higher level of liquidity (Caroll *et al.* 1988; Evans *et al.* 2005). My results are somewhat surprising with regard to leverage ratio which is significant but takes on a positive value. This result is in contrast to the theory of financial slack as advanced by Jensen and Meckling (1976), but consistent with the opportunistic behaviour by PE investors. Combined with the results regarding the effect of liquidity, this result suggests that PE investors in Australia are opportunistic (Chapple *et al.* 2010) in taking advantage of financially distressed firms with low valuations. I do not find any evidence in support of free cash flows. This is not surprising in that empirical evidence on the role of free cash flow in going private transactions is mixed. The analysis also suggests that capital expenditure is not an important driving force in going private and this is consistent with prior empirical studies in the US and UK (Weir and Wright, 2006; Opler and Titman, 1993).

This study has several implications. First, it suggests that high managerial ownership may provide incentives to insiders to take their firms private and in the process expropriate wealth from outside shareholders and bondholders. This finding indicates that existing agency structures appear to be insufficient in aligning the interest of outside shareholders and insiders in Australia. Second, an interesting area of future research would be to analyse the wealth effects of managers after the firm is actually taken private. This would shed light on all the ex-post wealth effects of managers in taking their firm private.

CHAPTER 6

INCENTIVE ALIGNMENT, MONITORING MECHANISM AND PRIVATE EQUITY

6.1 Introduction

The recent growth of LBOs and the simultaneous rise of PE markets in the US and internationally, as noted by Cumming *et al.* (2007), has highlighted the concerns about these transactions. Jensen (1989), in his seminal paper on the eclipse of the public corporation, argue that going private transactions, particularly LBOs, create value through improved monitoring and effective incentives. Public corporations that are characterized by non-value maximizing managerial behaviour are likely to have managers who are involved in squandering cash flow and averse to optimal levels of risk. With increasing importance being attached to internal governance mechanisms during recent times (Netter *et al.* 2009), it is important to discern the role of governance structure in aligning the interests between insiders and outsiders. In this study, I examine the role of governance mechanism, with the presence of high managerial ownership, in going private transactions. Using a sample of ASX takeover firms from 1990 to 2010, I test the proposition that high managerial ownership and ineffective governance mechanisms increase the likelihood of going private through PE takeovers.

The development and adoption of corporate governance codes within the board structure is expected to improve internal governance mechanisms across firms (Keasey *et al.* 2005). With improved internal governance, agency problems may be reduced and it becomes more difficult for managers to maximize their own interests. As a result, efforts have been made by policy makers in developed economics to develop effective corporate governance codes to ensure that appropriate mechanisms are put in place to minimize agency conflicts (Henry, 2004; Weir and Wright, 2006; Cumming *et al.* 2007). Literature on corporate control research has also suggested a number of incentive devices and monitoring mechanisms that can align the interest of shareholders and managers to mitigate agency conflicts.

Extant literature suggests that poor governance mechanism can provide incentives for public corporations to go private (Weir *et al.* 2005a). The internal governance mechanisms that have been shown to be effective are the presence of independent directors in the board, absence of CEO-Chair duality, smaller board size etc (Henry, 2004; Weir *et al.* 2005b; Weir and Wright, 2006; Florackis and Ozkan, 2009a). Although governance mechanisms are put in place internally, they may not always work properly. With a non-performing internal governance structure in place, disciplinary takeovers will occur as a response to the under-performing management. However, firms with high insider ownership are more costly to acquire and managers of those firms are likely to protect any hostile raider's attempt (Stulz, 1988). Therefore, the problem of ineffective internal governance structure is exacerbated with high managerial shareholdings. This situation, as a whole, is likely to provide incentives to both managers and private equity investors to take the firm private where managers are expected to deliver better results under better and closer monitoring (Jensen, 1989). However in public corporations, managers can act in their best interests when opportunity arises. This non-value maximizing behaviour is more prominent in firms with ineffective monitoring mechanisms (Keasey *et al.* 2005). Managers in these firms are more likely to be engaged in activities that make themselves outwardly indispensable. Therefore, a crucial role of the company board is to adopt appropriate governance and disciplinary mechanisms to align the interests between insiders and outside shareholders (Florackis and Ozkan, 2009b). In addition, Jensen and Meckling (1976) suggest that in the absence of effective internal control mechanism, an external control mechanism often referred to as the market for corporate control will play its disciplinary role in aligning the interest between mangers and outside shareholders.

Leland and Pyle (1977) and Opler and Titman (1993) suggest that managers are more likely to hold a large share of their firms' stock in the presence of substantial asymmetric information between managers and shareholders. This is because managers may not wish to disseminate sufficient information about their firms in order to maintain control over the firm and to maximize their own benefit. Therefore, an increase in management shareholdings might be driven by the efforts to preserve insider control (Filatotchev *et al.* 1999). This argument provides reason to suggest that managers with high ownership stakes have an incentive to take their firm private in order to maintain control. Given that PE bidders are friendly acquirers, as suggested by Chapple *et al.* (2010), managers may

believe that they would retain their position after being taken over by PE firms. In such a situation, external control mechanisms are expected to play roles in disciplining the managers through possible takeover pressure from the market (Lehn and Poulsen, 1989). This takeover pressure may also reflect a market response to an observed exploitation of asymmetric information by the management (Eddey *et al.* 1996). However as Stulz (1988) suggests, firms with high managerial ownership are more costly to acquire and are less likely to be targeted in a traditional takeover attempt.

The empirical evidence on the nature of incentive devices and governance structure and their role in the private equity context is an unexplored area. Despite a considerable body of research on the aspects of manager-shareholder conflict and governance mechanisms, there is little attempt in the current literature to examine the interaction of incentive alignment and monitoring mechanism in private equity transactions. The main objective in this study, therefore, is to address this gap by focusing on managerial shareholdings and firm specific governance characteristics on going private through private equity in the Australian context. In doing so, it is hypothesized that high managerial shareholdings and ineffective internal governance structure increase the likelihood of public firms going private. Further, it is argued that the impact of managerial shareholdings on going private is likely to be affected by firm-specific governance characteristics. I also hypothesize and test that in the absence of an effective internal control mechanism, the market for corporate control plays its disciplinary role and attempts to remove the non-value maximizing management and the board.

The majority of extant literature on private equity uses samples of US or UK deals. Although, private equity investment in Australia has grown to a considerable level since the 1990s[9], there is a lack of sufficient research in this area. Therefore, a comprehensive study exploring the relationship between incentive alignment, monitoring mechanism and private equity deals in the context of Australia provides a significant contribution to the private equity literature. With the existence of the Chapple *et al.* (2010) study exploring the characteristics of target firms in PE transactions in Australia, I am not aware of any research that examines the interaction of managerial ownership and governance structure in the likelihood of Australian firms going private through PE

---

[9]Chapple *et al.* (2010) provide an exploratory study on features of Australian going private firms with a smaller number of observations.

takeovers. I use a sample of PE target firms and compare them with a set of firms that do not go private within a longer period of 1990 to 2010. Analysis reveals that high managerial ownership alone is a dominant factor in the likelihood of firms going private through PE takeovers in Australia. In addition, I find that managerial ownership has a significantly non-linear relationship with board governance structure. Consistent with this, I also present evidence that market for corporate control is active in playing its disciplinary role in Australia. The remainder of this study is structured as follows: Section 2 provides a discussion on the interplay of managerial ownership, corporate governance characteristics and PE takeovers. Section 3 describes the data, sample selection process and methodological issues. The empirical results are reported in Section 4 and Section 5 presents the conclusions.

6.2 Managerial Ownership, Governance and Private Equity

Kaplan and Stromberg (2009) argue that PE transactions appear to be associated with incentive and governance mechanisms that enhance performance. This is because incumbent management is likely to have information on how to make a firm perform better. As a result, with better incentives and closer monitoring, managers are expected to deliver better results. Stuart and Yim (2010) suggest that with high ownership stakes, managers may have a strong incentive to increase their own wealth together with the controlling interest in the firm. One way to do this is to take their firm private, enhance their performance and maximize their own benefit.

Public corporations are characterized by dispersed shareholdings. Since management is vested in the hands of a small number of professionals who are less likely to act in the best interest of the outside shareholders (O'Sullivan and Wong, 1999), it is necessary to ensure that appropriate methods of internal governance exist to prevent executives from pursuing their own interests. Jensen and Meckling (1976) argue that offering ownership stakes to managers should reconcile the interests of shareholders and managers. Literature, however, suggests that this may not be the case (Manry and Nathan, 1999; Weir *et al.* 2005b). While owner-managers are expected to deliver value maximizing outcomes, there is evidence that managers may become more opportunistic with increased levels of ownership (Morck *et al.* 1988). Therefore, managerial shareholdings create a trade-off between convergence of interest (Jensen and Meckling, 1976) and non-value maximizing behaviour (Manry and Nathan, 1999). In addition, Filatotchev *et al.*

(1999) argue that with a high level of ownership, managers may have incentives to transfer the resources of the firm to other companies under their full control.

Stuart and Yim (2010) suggest that high insider ownership makes the acquisition process easier for the PE bidders. With high ownership stakes, managers are more likely to accept a PE bid to maximize their own wealth together with ensuring their controlling interest within the firm. North (2001) argues that increased managerial ownership tends to raise the financial gains of the managers through accepting a PE led bid. This suggests a positive relationship between managerial ownership and going private transactions. Furthermore, benefits of control can act as another key aspect in going private deals. Jensen (1989) argues that PE firms apply financial, governance and operational engineering to their portfolio companies and, in the process, improve firm operations and create economic value. PE firms also require managers to make a meaningful investment in the company, so that managers have a considerable stake in the company's equity capital. This high equity stake reduces management's incentive to manipulate the company's performance (Kaplan, 1989) since this situation also ensures management to have more control over their firm.

Evidence suggests that PTP firms have a higher managerial share ownership than those involved in traditional acquisitions (Maupin, 1987; Maupin *et al.* 1984; Halpern *et al.* 1999, Weir *et al.* 2005a). Fama and Jensen (1983) suggest that going private may increase the efficiency of the organization with concentration of residual claims in the hands of decision makers and controllers. As a result, with high ownership stakes managers will find going private an attractive vehicle to consolidate the firm's residual claims into their own hands. The evidence thus suggests that target firms in PTP deals have high managerial ownership. I, therefore, propose that high managerial ownership increases the likelihood of firms going private through PE backed deals in Australia.

Another aspect of the agency problem that has received little attention, as denoted by Weir and Wright (2006), is the link between governance structure and a going private decision. Maupin *et al.* (1984) find that managers and directors have significantly higher ownership in PTP transactions relative to traditional takeovers. As a result, there has been an increasing international awareness on the role of internal governance mechanisms in aligning the interest between managers and outside shareholders. In the

US, the most recent is the Sarbanes Oxley Act 2002. In the UK, a number of reports have specifically addressed the issue; namely, Cadbury (1992), Greenbury (1995) and Hampel (1998). In Australia, ASX CGC proposed a set of corporate governance best practices in 2003 to be implemented from the 2004 reporting year onwards (Henry, 2004). These guidelines suggest that publicly quoted companies should adopt a Code of Best Practice in their governance structure. The recommendation identifies a number of specific governance characteristics that are associated with good governance, such as a significant representation of independent non-executive directors and absence of CEO-Chair duality. Weir and Wright (2006) argue that if the firms do not exhibit these structures, they are likely to be poor performers. If the market for corporate control operates as suggested by Jensen and Meckling (1976), ineffective corporate governance mechanisms should result in successful hostile takeover bids being made.

Fama (1980) notes that significant nonexecutive director representation usually brings the necessary skills and experience that enable effective monitoring to ensure policies are consistent with shareholder objectives. Another important governance mechanism relates to the existence of CEO-Chair duality, the condition where one person takes on the posts of both chairman and CEO. US, UK and Australian good governance practices take the view that duality is undesirable given the degree of control and influence that it gives to one person in the decision-making process (Weir *et al.* 2005a; Henry, 2004). The development and adoption of good corporate governance codes are expected to lead a convergence of internal governance (Ezzamel and Watson, 2005). With ineffective monitoring, public corporations will be subjected to non-value maximizing managerial behaviour. Weir *et al.* (2005a) argue that taking a company private would also yield significant financial gains to the executive directors in the form of increasing shareholdings post-PTPs. For example, Frankfurter and Gunay (1992) report that insider shareholdings increase by an average of 58% post-PTPs. I, therefore, propose that ineffective internal control mechanisms increase the likelihood of going private. I also believe that, the ineffective internal governance mechanisms intensify at higher managerial shareholdings and interact with non-value maximizing managerial behaviour to further increase the likelihood of public firms going private.

Literature suggests that in the absence of effective internal monitoring mechanisms, the market for corporate control can play its disciplinary role (Morck *et al.* 1988). Consistent

with this, Weir and Wright (2006) argue that companies that go private have been the subject of takeover speculation whilst being publicly quoted; it is because those companies are considered to have ineffective internal governance mechanisms. The market for corporate control, therefore, is regarded as a substitute for weak internal governance (Kini *et al.* 1995). A number of studies (Lehn and Poulsen, 1989; Halpern *et al.* 1999) find that companies going private are more likely to experience takeover speculation than firms that do not. This evidence is consistent with the basic role of the market for corporate control as described by Jensen and Meckling (1976). This leads to the argument that going private is a response to the threat of takeover and it implies that takeover threat is a substitute for non-optimal internal governance mechanisms. I, thus, propose that in the absence of effective internal governance mechanisms, going private firms are more likely to experience takeover pressure from the market for corporate control before they go private.

The primary focus in this study is the role of incentive alignment and firm specific governance characteristics in going private through PE takeovers. Using managerial shareholdings as a proxy to the incentive alignment, I examine whether firms with high managerial ownership and poor internal governance structure are more likely to opt out of the public capital market and go private. I argue that the levels of managerial ownership in predicting private equity takeovers are interlinked with the internal governance mechanism. Although governance plays an important role in aligning the interests between insiders and outside shareholders, the level of managerial ownership may provide incentives to managers to take their firm private. Therefore, I propose that the effectiveness of internal governance structure is likely to be reduced at high levels of managerial ownership. This interaction between high managerial ownership and internal governance structure in the context of private equity takeovers using Australian data is the first to be examined in the literature. In this respect, this study potentially provides new evidence to the Australian going private literature concerning private equity takeovers.

6.3 Data and Research Design

The sample consists of all successful going private transactions involving companies listed on the ASX and made between 1 January 1990 and 31 December 2010. The sample is formed by utilizing a variety of databases and resources. The initial sample of

all takeovers is collected from the SDC Platinum ANZ M&A Database. Initially a total of 517 successful going private bids are identified. I then screen the sample for bids involving an acquirer with a status of 'Joint Venture' or 'Subsidiaries'. The primary sample of going private bids are considered a PE led bid only when it is financed wholly or partly by a PE firm to ensure that the firm has indeed become private and acquiring companies are not affiliated with public corporations. The going private transactions are then re-confirmed via the list of ASX delisted firms from Aspect Huntley Morning Star DatAnalysis Database. The list of PE takeovers is then finalized and confirmed through the Bureau Van-Dijk ORBIS Global Database. This process yields 129 firms as the final sample, which I refer to as 'PE' target firms. Annual accounting information is obtained from Aspect Huntley Morning Star FinAnalysis database. Once the financial data are collected from FinAnalysis, the annual reports of those 129 PE target firms have been downloaded from DatAnalysis database. Managerial ownership and other governance information were then retrieved from those annual reports on a company-by-company basis.

Table 6.1 provides the frequency distribution of PTP deals in Australia in terms of number of deals. It shows that a total of 4546 completed deals took place in ASX. 517 completed going private deals are identified in Australia during the sample period, constituting 11.37 percent of all completed deals. As is mentioned in Evans *et al.* (2005), approximately ten percent of all deals in Australia are going private deals. With steady increase, the going private deals have become around twelve percent in recent times. Stromberg (2007) notes that, going private deals increased considerably after 2000. Table 6.1 suggests a similar evidence for Australia where the majority of PTP deals take place between 2001 and 2007. Panel B shows the screening process of selecting the sample for the study.

Table 6.1: Private Equity Transactions in Australia 1990 – 2010

Panel A: Annual Frequency of all completed going private transactions

	All Non-PTP Deals		All Going Private		Only Private Equity	
Year	Number	Percent	Number	Percent	Number	Percent
1990 - 1992	171	4.24	11	2.13	0	0.00
1993 - 1995	340	8.44	34	6.58	1	0.77
1996 - 1998	462	11.47	40	7.74	5	3.88
1999 - 2001	341	8.46	51	9.86	19	14.73
2002 - 2004	777	19.29	93	17.98	33	25.58
2005 - 2007	799	19.83	133	25.73	52	40.31
2008 - 2010	1139	28.27	155	29.98	19	14.73
Total	4029	100%	517	100%	129	100%

Panel B: Private Equity Deals in Australia

		Sub-total	Total
All PTP Deals		517	
Less:	Acquirers or targets with status of 'Subsidiary' or 'Joint Venture'	95	422
Less:	Deals not financed (wholly/partly) by private equity firms	244	178
Less:	Information not available for the last 3 years	49	129
Final Total of Private Equity deals			129

Panel C: Industry Concentration of Private Equity transactions

Industry	PE Deals	Industry	PE Deals
Mining	22	Transportation Services	4
Oil and Gas exploration	4	Communication Supplies/Services	12
Equipment Production/Supplies	7	Media, Audio/Video Distribution	8
Construction Services	7	Amusement/Recreation Services	7
Food, Drink and Kindered Products	6	Real Estate Investment	9
Firms, Dealers, Exchanges	8	Miscellaneous Trade	11
Financial Institutions	2	Business Services	13
Health and Allied Services	6	Hotels and Motels	4
Total Completed PE Deals: 129			

Table 6.1 panel C classifies the PE takeover firms into various industry groupings showing the number of firms in each industry group. ASX divides its listed companies into 25 different industry groups, including sub-groups. Prior Australian studies (Evans *et al.* 2005; Eddey *et al.* 1996) have suggested that the financial sector had the greatest number of going private deals in Australia. Chapple *et al.* (2010) find a very low concentration of Australian PE firms in the financial and mining sectors. The evidence in Table 6.1 does not agree with Chapple *et al.* (2010) in terms of the mining sector, but shows a similar pattern in terms of the financial sector. A possible reason for these differences can be the differences in the time period covered by these studies. However,

it is apparent that during the last two decades, PE firms in Australia do not concentrate on any particular industry sector and this is consistent with the idea that PE firms in Australia are 'opportunistic' and do not seem to concentrate on any particular industry sector for their target firms (Chapple *et al.* 2010).

To investigate the differences between the nature of PE takeovers and traditional takeovers, I construct a matching sample of firms which are taken over in the public market via acquisition by a publicly listed firm and in which their assets stayed public. I term this set of firms as 'Non-PE' firms and use comparative analysis throughout the paper[10]. For each PE firm, I use a two dimensional scoring method to match to a non-PE firm. I first match the PE firm in the same industry sector that had a public-to-public transaction and, secondly, in the same year as the PE firm.

The first set of regression analysis involves testing the impact of managerial shareholdings and internal governance structure on the probability of going private. In doing so, I first determine the probability of going private of each of the firms in the sample using only the firm-specific accounting variables. I employ a logit regression to find the probability of going private as follows:

$$L_i = Ln\,[P_i/(1-P_i)] = \alpha + \beta_1 LVG_i + \beta_2 CURR_i + \beta_3 FCF_i + \beta_4 CAPEX_i + \varepsilon_i$$

Employing the logit regression form as above, I then generate the probability of going private for each of the observations in the sample. Based on the generated probability, I then stratify the 129 PE target firms into three different groups; namely, firms with low probability of going private, firms with high probability of going private and firms lying in the middle of these two groups. Each of the groups, then, yields 43 PE target firms. I then test the impact of managerial shareholdings and internal governance structure on the probability of going private in three different stages using low, middle and high probability group of firms as follows:

$$P_i\,(PE) = \alpha + \beta_1 LowP_i MSO_i + \beta_2 LowP_i CG + \beta_3 LowP_i MSO_i*CG_i + \varepsilon_i \qquad (1a)$$

$$P_i\,(PE) = \alpha + \beta_1 MiddleP_i MSO_i + \beta_2 MiddleP_i CG + \beta_3 MiddleP_i MSO_i*CG_i + \varepsilon_i \qquad (1b)$$

$$P_i\,(PE) = \alpha + \beta_1 HighP_i MSO_i + \beta_2 HighP_i CG + \beta_3 HighP_i MSO_i*CG_i + \varepsilon_i \qquad (1c)$$

---

[10]Matching samples have been used in studies of going private transactions. See for example, Lehn and Poulsen (1989) and Weir *et al.* (2005a, 2005b).

Since the dependent variable in this case is a generated regressor, I employ OLS regression using bootstrapped standard error method (Pagan, 1984) to account for the generated regressor. I also introduce the interaction terms to determine the joint effect of managerial shareholdings and corporate governance at different levels of probability of going private.

The second set of regression analysis involves testing the association between different levels of managerial shareholdings and firm-specific internal governance characteristics. I also use the control variables to control for firm-specific accounting characteristics:

$$CG_i = \alpha + \beta_1 MSO_i + \beta_2 Con_i + \varepsilon_i \qquad (2)$$

Next, I use logistic regression to model a firm's decision to go private. In this analysis, I introduce a takeover speculation variable to account for the effect of the market for corporate control. I also use interaction terms in the last set of empirical analysis to examine the joint effect of managerial shareholdings and governance mechanisms. I test this as follows:

$$L_i = Ln\ [P_i/(1-P_i)] = \alpha + \beta_1 MSO_i + \beta_2 CG_i + \beta_3 Con_i + \beta_4 MSO_i * CG_i + \varepsilon_i \qquad (3)$$

In logit regression, PE_i, the dependent variable, is a dichotomous variables that takes the value 1 if the firm is taken over by PE firm and 0 otherwise. $LowP_i$, $MiddleP_i$ and $HighP_i$ are the PE target firms stratified into low, middle and high probability groups of going private. MSO represents the level of managerial shareholdings and CG represents the internal governance variables of a firm i with Con_i representing a vector of control variables. The MSO variable simply measures the number of ordinary shares held directly and indirectly by the managers of a firm i expressed as a percentage. Following Weir *et al.*(2005a), Weir and Wright (2006) and Henry (2010), I construct four internal governance variables that are relevant in going private and private equity literature and thought to have effects on private equity takeovers: board shareholdings (BSO), board independence (BIND), CEO-Chair duality (DUAL) and board size (BRDSZ). All variables are measured as of the balance sheet date of the year in which the firm was taken over.

The control variables are drawn from prior literature of firm-specific accounting variables that may also contribute to the going private decision. Specifically, following

Weir *et al.* (2005a, 2005b) I select leverage ratio, current ratio, free cash flow and capital expenditure to be the control variables. Below I present a list of all the variables and their measurement.

Managerial Share Ownership (MSO): MSO measures the number of ordinary shares held directly and indirectly by the management and is calculated as the absolute number of ordinary shares held by management team divided by the total number of ordinary shares outstanding.

Board Share Ownership (BSO): BSO measures the number of ordinary shares held directly and indirectly by the members of the company board and calculated as the absolute number of ordinary shares held by the members of the company board divided by the total number of ordinary shares outstanding.

Board Independence (BIND): BIND is a dummy variable that takes the value 1 if the number of independent non-executive directors is equal to or less than 50% on the board and 0 otherwise. The ASX CGC recommends the majority of the board members are to be independent, non-executive directors to ensure board independence (Henry, 2004).

CEO-Chair duality (DUAL): DUAL is a dummy variable that takes the value 1 if the posts of CEO and Chairman are combined and 0 if they are separated.

Board Size (BRDSZ): BRDSZ is the total number of directors on the company board.

Takeover Speculation (THREAT): THREAT is a dummy variable that takes the value 1 if there is a takeover bid and/or rumour of a bid on the target firms during the last 24 months prior to the actual takeover and 0 otherwise. The information on takeover speculation is collected through the ASX Announcement Section from the DatAnalysis database by a company-by-company basis.

Leverage (LVG): LVG is a measure of the debt condition of the firm. It is calculated as total liabilities divided by total assets.

Current ratio (CURR): CURR is a measure of the liquidity condition of the firm. It is calculated as current assets divided by current liabilities.

Relative Free Cash Flow (FCF): This measures a company's relative free cash flow. Free cash flow is measured as operating cash flow minus interest, taxes and dividends. Relative FCF is found as free cash flow divided by total assets.

Capital Expenditure (CAPEX): CAPEX measures a company's net capital expenditure. It is defined as spending on new buildings, property and equipment minus depreciation, divided by the book value of total assets.

6.4 Univariate Results

Table 6.2 below, shows the results of univariate tests of the proposition that firms going private through PE takeovers have high managerial shareholdings and ineffective internal governance structure compared to the traditional takeover firms. The mean values of MSO, BSO and BIND of PEs are significantly different from those of Non-PE target firms at the one percent level. In addition, the mean values of the LVG and CURR of the PE sample also show a significant difference from those of the Non-PE sample. However, the mean values of DUAL, BRDSZ, FCF and CAPEX for the PE and Non-PE samples are not significantly different from each other. Consistent with this, the mean value of THREAT of PEs is significantly different from the Non-PE firms at the one percent level. The median test also shows a similar result for PE and Non-PE firms. The median values of MSO, BSO, BIND, LVG, CURR and THREAT of PEs are significantly different from those of Non-PE target firms at the one percent level. The results of t-tests and z-tests, therefore, support the hypotheses and show that Australian PE target firms have different firm attributes.

Table 6.2: Univariate Analysis of PE and Non-PE Samples

Table 6.2 shows the results of t-test and Wilcoxon rank-sum Mann-Whitney test to identify if the mean and median values of different variables of PE and Non-PE sample target firms are significantly different from each other. The sample is drawn over the period from 1990 to 2010 as in Table 6.1. MSO is the percentage of ordinary shares held by management. BSO is the percentage of ordinary shares held by board members. BIND is a binary variable that takes the value 1 if the majority of the board members are independent non-executive directors and 0 otherwise. DUAL is a binary variable that takes the value 1 if CEO and Board-Chair are the same person and 0 otherwise. BRDSZ is the number of directors on the company board. THREAT is a binary variable that takes the value 1 if the target firm faces speculation of being taken over within the last 24 months of actual takeover and 0 otherwise. LVG is the leverage ratio calculated as total liabilities divided by total assets. CURR is the current ratio calculated as current assets divided by current liabilities. FCF is the free cash flow divided by total assets. Free cash flow is calculated as operating cash flow minus interest, taxes and dividends. CAPEX is the spending on new buildings, property and equipment minus depreciation, divided by the book value of total assets. ** indicates $p < 0.01$ and * indicates $p < 0.05$.

	Mean				Median			
	PE	Non-PE	t-stat	p-value	PE	Non-PE	z-stat	p-value
MSO	0.141	0.041	-7.27**	0.000	0.085	0.032	-7.61**	0.000
BSO	0.101	0.033	-4.79**	0.000	0.033	0.019	-3.92**	0.000
BIND	0.574	0.295	-4.69**	0.000	1.00	0.00	-4.51**	0.000
DUAL	0.101	0.102	0.00	1.00	0.00	0.00	0.00	1.00
BRDSZ	5.829	5.729	-0.45	0.653	6.00	5.00	-1.49	0.134
THREAT	0.566	0.163	-7.38**	0.000	1.00	0.00	-6.71**	0.000
LVG	0.496	0.380	-2.91**	0.002	0.465	0.336	-3.64**	0.000
CURR	4.095	1.332	-3.32**	0.000	2.25	1.23	-8.80**	0.000
FCF	0.100	0.037	-1.45	0.074	0.104	0.093	-0.57	0.569
CAPEX	0.085	0.109	1.07	0.142	0.041	0.041	0.20	0.845

6.5 Multicollinearity Test

High correlations among independent variables can indicate the possibility of multicollinearity which means that the resultant analysis may not give valid results about individual predictors. As a result, variables having multicollinearity should not be included in the same regression equation (Gujarati, 2005). Table 6.3 shows the correlation matrix for the independent variables generated through the Spearman and Pearson correlation methods. The correlation coefficient between BIND and BSO is 0.482. This value might indicate the existence of a slight multicollinearity between the variables. Gujarati (2005) argues that slight multicollinearity would not pose any statistical problem as long as the correlation between independent variables in a model is lower than the correlation between each of the independent and dependent variables. The correlation matrix does not exhibit any other significantly high level of correlation among the independent variables. Accordingly, it is not needed to exclude any of the other variables from the models.

Table 6.3: Correlation among Independent Variables

Table 6.3 shows the correlation coefficients among the independent variables. The top diagonal numbers are Spearman correlation coefficients, while the bottom diagonal numbers are Pearson correlation coefficients. MSO is the percentage of ordinary shares held by management. BSO is the percentage of ordinary shares held by board members. BIND is a binary variable that takes the value 1 if the majority of the board members are independent non-executive directors and 0 otherwise. DUAL is a binary variable that takes the value 1 if CEO and Board-Chair are the same person and 0 otherwise. BRDSZ is the number of directors on the company board. THREAT is a binary variable that takes the value 1 if the target firm faces speculation of being taken over within the last 24 months of actual takeover and 0 otherwise. LVG is the leverage ratio calculated as total liabilities divided by total assets. CURR is the current ratio calculated as current assets divided by current liabilities. FCF is the free cash flow divided by total assets. Free cash flow is calculated as operating cash flow minus interest, taxes and dividends. CAPEX is the spending on new buildings, property and equipment minus depreciation, divided by the book value of total assets.

	MSO	BSO	BIND	DUAL	BRDSZ	THREAT	LVG	CURR	FCF	CAPEX
MSO	1	0.159	0.231	0.083	-0.014	0.186	0.092	0.376	0.007	0.028
BSO	0.081	1	0.482	0.062	-0.081	0.116	-0.098	0.129	-0.156	0.011
BIND	0.182	0.391	1	0.097	-0.088	0.133	-0.106	0.129	-0.115	-0.028
DUAL	0.046	-0.028	0.097	1	-0.143	0.041	-0.131	0.008	-0.091	0.065
BRDSZ	-0.049	-0.029	-0.123	-0.088	1	0.079	0.159	0.067	0.283	-0.107
THREAT	0.064	0.081	0.133	0.041	0.053	1	0.105	0.164	0.085	-0.033
LVG	0.079	0.107	-0.066	-0.123	0.122	0.058	1	-0.024	0.217	-0.149
CURR	0.101	0.055	0.015	0.029	-0.098	0.031	-0.035	1	-0.091	0.068
FCF	0.059	-0.089	-0.065	0.007	0.195	0.076	-0.031	-0.043	1	0.039
CAPEX	0.021	-0.027	0.032	0.047	-0.189	-0.069	-0.022	-0.001	-0.358	1

6.6 MSO and Governance Characteristics by Quintile

Table 6.4 shows the summary statistics of 129 PE target firms stratified into a low, medium or high group according to their probability of going private. The probability of going private is calculated for each of the observations employing a logit regression using the firm-specific accounting variables. This process yields 43 observations in each of the groups. The summary statistics shows that both MSO and BSO are increasing in moving from the low to the high probability group, with an exception of MSO mean value in the medium probability group which is higher than that of high probability group. In the low probability group, sixty percent of the firms do not have an independent board; while in the high probability group fifty five percent of the boards are not independent. The THREAT variable shows a similar fashion of having higher speculation in the low probability group. Table 6.4 also shows the results of the univariate tests of mean and median between the low and the high probability group. The t-test shows that none of the mean values of the low probability MSO and governance variables is significantly different from those of the high probability firms. In terms of the z-test, only the median value of MSO of the low and the high probability firms is significantly different from each other.

Table 6.4: Summary Statistics of Low, Medium and High Probability PE Target Firms

Table 6.4 compares the summary statistics of 129 PE target firms stratified into low, medium and high group according to their probability of going private. The probability of going private is calculated for each of the observations employing a logit regression using the firm-specific accounting characteristics. MSO is the percentage of ordinary shares held by management. BSO is the percentage of ordinary shares held by board members. BIND is a binary variable that takes the value 1 if the majority of the board members are independent non-executive directors and 0 otherwise. DUAL is a binary variable that takes the value 1 if CEO and Board-Chair are the same person and 0 otherwise. BRDSZ is the number of directors on the company board. THREAT is a binary variable that takes the value 1 if the target firm faces speculation of being taken over within the last 24 months of actual takeover and 0 otherwise. LVG is the leverage ratio calculated as total liabilities divided by total assets. CURR is the current ratio calculated as current assets divided by current liabilities. FCF is the free cash flow divided by total assets. Free cash flow is calculated as operating cash flow minus interest, taxes and dividends. CAPEX is the spending on new buildings, property and equipment minus depreciation, divided by the book value of total assets. ** indicates $p < 0.01$ and * indicates $p < 0.05$.

	Low Probability Group		Medium Probability Group		High Probability Group		High and Low	
	Mean	Median	Mean	Median	Mean	Median	t-stat	z-stat
MSO	0.104	0.054	0.164	0.097	0.156	0.103	-1.721	-2.008*
BSO	0.078	0.023	0.109	0.042	0.115	0.044	-1.262	-1.516
BIND	0.605	1.00	0.558	1.00	0.558	1.00	0.433	0.435
DUAL	0.069	0.00	0.116	0.00	0.116	0.00	-0.736	-0.738
BRDSZ	5.721	6.00	5.767	6.00	6.00	6.00	-0.817	-0.649
THREAT	0.698	1.00	0.488	0.00	0.512	1.00	1.776	1.754
LVG	0.481	0.497	0.488	0.419	0.515	0.472	-0.524	0.436
CURR	1.371	1.27	2.319	2.25	8.596	4.51	-0.367**	-7.986**
FCF	0.121	0.139	0.127	0.119	0.052	0.037	1.643	3.511**
CAPEX	0.077	0.044	0.059	0.035	0.118	0.048	-1.412	-0.738
Observation	43		43		43			

I now sort the whole sample and place them in seven quintiles according to their MSO and present a comparison of different governance measures at those seven levels of MSO. If MSO and governance drive private equity transactions, it should be clear through the firm characteristics when data is separated into PE and non-PE firms. The results are produced in Table 6.5. From very low to high levels of MSO, none of the governance measures moves with the MSO in a linear fashion. Average BSO is increasing with increasing MSO but in a non-linear fashion, while the board independence is decreasing with increasing MSO, again in a non-linear fashion. Takeover speculation also seems to be increasing with increasing MSO but in a non-linear fashion. The quintile analysis, therefore, does not indicate any consistent positive or negative relationship between the levels of MSO and governance variables. However,

this result does show the fact that PE target firms have inferior governance structures to those of Non-PE target firms at different levels of MSO. These results provide some initial evidence that ineffective governance structures are prevalent within the PE target firms. In addition, these results also provide some initial evidence of a possible non-linear relationship between the levels of MSO and firm-specific governance characteristics.

Table 6.5: Governance Characteristics of Target Firms at different levels of MSO

Table 6.5 shows the firm-specific corporate governance characteristics at different levels of MSO. 258 target firms are stratified into seven quintiles based on their MSO. MSO is the percentage of ordinary shares held by management. BSO is the percentage of ordinary shares held by board members. BIND is a binary variable that takes the value 1 if the majority of the board members are independent non-executive directors and 0 otherwise. DUAL is a binary variable that takes the value 1 if CEO and Board-Chair are the same person and 0 otherwise. BRDSZ is the number of directors on the company board. THREAT is a binary variable that takes the value 1 if the target firm faces speculation of being taken over within the last 24 months of actual takeover and 0 otherwise.

		Avg BSO		BIND%		DUAL%		Avg BRDSZ		THREAT%	
MSO %	N	PE	Non-PE	PE	Non-PE	PE	Non-PE	PE	Non-PE	PE	Non-PE
< 0.017	36	0.065	0.034	0.751	0.786	0.00	0.00	6.251	6.429	0.501	0.179
0.017 < 0.027	37	0.138	0.036	0.455	0.654	0.00	0.154	6.182	5.115	0.545	0.038
0.027 < 0.039	37	0.105	0.034	0.401	0.629	0.00	0.185	5.801	5.074	0.401	0.223
0.039 < 0.062	37	0.113	0.016	0.529	0.801	0.118	0.151	6.294	5.951	0.588	0.351
0.062 < 0.09	37	0.101	0.048	0.476	0.813	0.095	0.00	5.762	5.875	0.809	0.063
0.09 < 0.151	37	0.099	0.033	0.269	0.545	0.077	0.091	6.038	6.182	0.654	0.091
0.151 & over	37	0.091	0.076	0.389	0	0.194	0.00	5.306	8.001	0.417	0.00
Observations						258					

6.7 MSO, Governance and the Probability of PE Takeovers

Panel A, B and C of Table 6.6 show the results of cross sectional regressions of MSO and governance variables on the probability of going private. I also use interaction terms between MSO and governance variables to determine the joint effect of MSO and governance mechanisms. In addition, I use the quadratic form of MSO in the regression to capture any possible non-linearity in MSO and going private. The dependent variable for this regression is the probability of going private which is calculated through a logit regression using only firm-specific accounting variables. I then generate probabilities for each of the observations in the sample. Based on the probabilities, I stratify 129 PE target firms in three different groups; namely, firms with low probability of going private, firms with high probability of going private and firms that lie in the middle. This process

yields 43 firms in each group. I then match the Non-PE target firms with the PE target firms based on industry and the time period. Therefore, I have 86 observations in each of the groups of low, middle and high probability. Since the dependent variable in this regression model is a generated regressor, I employ bootstrapped standard error method for the empirical analysis (Pagan, 1984). To employ empirical analysis in this section, I use the regression specification of Equation 1. Panel A shows the regression result of the low probability group. None of the variables seem to affect the firm-specific probability of going private when they are in the low probability group. The results exhibit a significant change with the high probability group. Panel C shows that MSO and MSO^2 are consistently significant with MSO having a positive relation with the probability of going private and MSO^2 having a negative relation with the probability of going private. This result seems consistent with the result from Panel A revealing the fact that at low probability of going private, MSO is not a driving force in going private. However, with high probability firms, MSO significantly increases the likelihood of going private. This evidence presents a significant non-linear relationship between MSO and going private. The governance variables, including the interaction terms, do not seem to have differential effect on the probability of going private at different levels of probability.

Table 6.6: OLS Regression of MSO and Governance on the Probability of PE Takeovers

Table 6.6 shows the results of cross sectional regressions of MSO and governance variables on the probability of going private. Since the dependent variable is a generated regressor, bootstrapped standard error method is used to account for the generated regressor. 129 PE target firms are stratified into low, medium and high groups according to their probability of going private. The probability of going private is calculated for each of the observations employing a logit regression using only the firm-specific accounting characteristics. A matched sample of Non-PE target firms for each of the PE target firm groups has also been determined based on the industry and time period. Panel A, B and C show the results of low, medium and high probability groups of firms. MSO is the percentage of ordinary shares held by management. MSO^2 is the quadratic form of MSO. BSO is the percentage of ordinary shares held by board members. BIND is a binary variable that takes the value 1 if the majority of the board members are independent non-executive directors and 0 otherwise. DUAL is a binary variable that takes the value 1 if CEO and Board-Chair are the same person and 0 otherwise. BRDSZ is the number of directors on the company board. Interaction terms are interacted with MSO dummy where MSO dummy takes the value 1 if MSO > median and 0 otherwise. ** indicates $p < 0.01$ and * indicates $p < 0.05$. Figures in parentheses represent standard error of estimate.

Panel A: OLS Regression of MSO and Governance on PE Takeovers by Low Probability Group

Variables	(1)	(2)	(3)	(4)	(5)
Constant	0.253*	0.317**	0.324**	0.313**	0.289**
	(0.096)	(0.019)	(0.047)	(0.025)	(0.092)
MSO	0.636	0.460	0.607	0.666	-1.232
	(0.425)	(0.622)	(0.900)	(0.591)	(2.341)
MSO^2	-0.768	0.096	-0.740	-0.805	0.235
	(1.081)	(1.740)	(2.382)	(1.893)	(16.87)
BSO	-0.093	-0.221			
	(0.165)	(0.652)			
BIND	-0.019		-0.014		
	(0.047)		(0.053)		
DUAL	-0.094		0.121		
	(0.103)		(1.113)		
BRDSZ	0.0131				0.003
	(0.016)				(0.015)
BSO*MSO		6.511			
		(18.78)			
$BSO*MSO^2$		-43.49			
		(79.87)			
BIND*MSO			-0.118		
			(1.408)		
$BIND*MSO^2$			-0.446		
			(3.821)		
DUAL*MSO				-4.432	
				(38.91)	
$DUAL*MSO^2$				9.766	
				(292.3)	
BRDSZ*MSO					0.376
					(0.468)
$BRDSZ*MSO^2$					-0.197
					(3.442)
Pseudo R^2	0.045	0.037	0.033	0.033	0.058
Observations	86	86	86	86	86

Panel B: OLS Regression of MSO and Governance on PE Takeovers by Medium Probability Group

Variables	(6)	(7)	(8)	(9)	(10)
Constant	0.277	0.397**	0.470**	0.474**	0.329
	(0.162)	(0.110)	(0.119)	(0.089)	(0.377)
MSO	1.546	1.405	0.868	0.934	1.622
	(0.998)	(1.526)	(3.180)	(1.041)	(4.231)
MSO^2	-1.360	-1.134	-0.373	-0.650	-3.681
	(1.204)	(3.030)	(7.315)	(1.700)	(7.412)
BSO	0.367	0.681			
	(0.345)	(0.489)			
BIND	-0.056		-0.031		
	(0.098)		(0.233)		
DUAL	-0.005			-0.542**	
	(0.088)			(0.204)	
BRDSZ	0.025				0.003
	(0.023)				(0.068)
BSO*MSO		-4.854			
		(11.73)			
$BSO*MSO^2$		4.767			
		(44.43)			
BIND*MSO			0.179		
			(3.864)		
$BIND*MSO^2$			-0.367		
			(7.648)		
DUAL*MSO				9.446	
				(8.114)	
$DUAL*MSO^2$				-36.73	
				(81.93)	
BRDSZ*MSO					0.187
					(0.816)
$BRDSZ*MSO^2$					0.047
					(1.369)
Pseudo R^2	0.147	0.132	0.095	0.139	0.125
Observations	86	86	86	86	86

Panel C: OLS Regression of MSO and Governance on PE Takeovers by High Probability Group

Variables	(11)	(12)	(13)	(14)	(15)
Constant	-0.120	0.217*	0.234*	0.349*	-0.240
	(0.173)	(0.091)	(0.093)	(0.173)	(0.331)
MSO	4.137**	5.477**	5.343*	4.391**	6.366*
	(1.476)	(1.242)	(3.953)	(1.414)	(3.924)
MSO^2	-5.783**	-7.806**	-7.608*	-5.767**	-8.391*
	(2.851)	(3.680)	(19.98)	(2.078)	(9.133)
BSO	0.914	1.459**			
	(0.503)	(0.426)			
BIND	0.155		0.662		
	(0.127)		(0.382)		
DUAL	-0.114			-0.335	
	(0.116)			(1.667)	
BRDSZ	0.063*				0.098
	(0.031)				(0.071)
BSO*MSO		-11.79			
		(8.913)			
$BSO*MSO^2$		17.52			
		(18.13)			
BIND*MSO			-4.690		
			(4.924)		
$BIND*MSO^2$			6.627		
			(20.44)		
DUAL*MSO				3.028	
				(120.6)	
$DUAL*MSO^2$				-5.962	
				(1.827)	
BRDSZ*MSO					-0.400
					(0.830)
$BRDSZ*MSO^2$					0.526
					(1.923)
Pseudo R^2	0.347	0.316	0.301	0.273	0.298
Observations	86	86	86	86	86

6.8 MSO and Internal Governance Structure

While the convergence of interest hypothesis (Jensen and Meckling, 1976) suggests a uniform positive relationship between management equity stakes and firm value, the entrenchment hypothesis predicts that firm valuation can be adversely affected through a significantly high degree of management ownership (Morck *et al.* 1988). Following from this, I expect management equity stakes would affect the internal governance structure differently at different levels of ownership. To capture this, I use the quadratic form of MSO variable in the model. Table 6.7 shows the results of OLS and logit regression of MSO on firm-specific governance characteristics of 258 Australian PE and Non-PE target firms using the specification of Equation 2. The analysis reveals that MSO is positive and significant against BSO, BIND and DUAL variables, while BRDSZ does not seem to be effected by the levels of MSO. This means that high managerial

ownership is a possible driving force to ensure that a non-optimal governance mechanism is in place. I also find that MSO^2 variable is significant with a negative coefficient along with MSO variable. This suggests that the level of managerial ownership affects the internal governance structure in a non-linear way. This result is surprisingly consistent with managerial entrenchment theory as suggested by Morck *et al.* (1988). This result is also consistent to the one presented in Table 6.6. I thus conclude that MSO has a significant non-linear relationship both with the probability of going private and with the internal governance structure. The results from Table 6.6 and Table 6.7 also reveal an important fact with regard to the internal governance structure in Australia. The analysis suggests that internal governance structure is weak or ineffective in Australia. This is not surprising since corporate governance best practice recommendations have only been in practice in Australia since 2004 (Henry, 2004).

Table 6.7: OLS and Logit Regression of MSO on Governance Structure

Table 6.7 shows the results of cross sectional and logit regressions of MSO on governance variables. BSO is the percentage of ordinary shares held by board members. BIND is a binary variable that takes the value 1 if the majority of the board members are independent non-executive directors and 0 otherwise. DUAL is a binary variable that takes the value 1 if CEO and Board-Chair are the same person and 0 otherwise. BRDSZ is the number of directors on the company board. MSO is the percentage of ordinary shares held by management. MSO^2 is the quadratic form of MSO. LVG is the leverage ratio calculated as total liabilities divided by total assets. CURR is the current ratio calculated as current assets divided by current liabilities. FCF is the free cash flow divided by total assets. Free cash flow is calculated as operating cash flow minus interest, taxes and dividends. CAPEX is the spending on new buildings, property and equipment minus depreciation, divided by the book value of total assets. Figures in parentheses represent standard error of estimate. Results reported are heteroskedasticity consistent. ** indicates $p < 0.01$ and * indicates $p < 0.05$.

Variables	BSO	BIND	DUAL	BRDSZ
Constant	0.038*	-0.573	-2.148**	5.778**
	(0.017)	(0.296)	(0.442)	(0.225)
MSO	0.323*	9.677**	9.178*	-2.939
	(0.169)	(3.138)	(4.413)	(2.312)
MSO^2	-0.458*	-11.58*	-14.49*	3.832
	(0.248)	(5.276)	(7.085)	(4.048)
LVG	0.034	-0.625	-2.026*	0.710**
	(0.045)	(0.453)	(0.943)	(0.344)
CURR	0.0007	-0.005	0.004	-0.021**
	(0.001)	(0.015)	(0.019)	(0.006)
FCF	-0.037	-0.448	0.422	0.773**
	(0.029)	(0.438)	(0.540)	(0.250)
CAPEX	-0.042	0.0007	1.094	-1.291**
	(0.036)	(0.668)	(0.957)	(0.401)
R^2	0.041			0.083
F stat	1.34			7.66
p-F stat	0.242			0.000
McFadden R^2		0.049	0.056	
Wald Chi^2		15.33	8.15	
p-WChi^2		0.018	0.228	
Observations	258	258	258	258

6.9 MSO, Market for Corporate Control and PE Takeovers

I now use the logit specification of Equation 3 to estimate the firm's decision to go private through PE takeovers. The THREAT variable is introduced in this section to incorporate the role of external control mechanism with a possible existence of a weak or ineffective internal governance mechanism. Takeover threat represents an external control mechanism in the market for corporate control (Lehn and Poulsen, 1989). It may also reflect a market response to an observed exploitation of asymmetric information by the management (Eddey *et al.* 1996). A number of US studies (Lehn and Poulsen 1989; Kieschnick 1998; Halpern *et al.* 1999) and prior Australian studies (Eddey *et al.* 1996 and Evans *et al.* 2005) have incorporated a takeover speculation variable based on press reports of takeover interest. I also include the same variable on the basis of such interest as reported by the ASX announcement window within the last 24 months of being taken over. I find that MSO is significant and positive in all regressions revealing the fact that high managerial ownership is a strong driving force in Australian PE takeovers. To the extent that private equity investors are friendly acquirers (Chapple *et al.* 2010), the positive association between MSO and going private captures the keenness of the PE investors to engage in transactions of firms with high managerial shareholding which are unlikely to be hostile. Among the internal governance variables, BIND is consistently significant while BSO is significant but not consistent enough. DUAL and BRDSZ are not significant and this is consistent with the earlier findings presented in Table 6.2. This suggests that internal governance mechanisms in Australia are not effectively designed to play a monitoring role. Therefore, I can conclude that corporate governance practices have a significant impact on the decision to go private in Australia. Henry (2004 and 2005) analyses the influence of internal governance measures in the outcome of takeovers in general and did not find any evidence of any specific internal governance and monitoring measures to be effective in Australia. No interaction terms are significant in the analysis, suggesting that MSO and internal governance mechanisms do not affect the going private decision jointly.

Consistent with this, I find THREAT variable to be significant and positive. This finding also supports the basic role of the market for corporate control as described by Jensen and Meckling (1976) which says that market for corporate control will play a disciplinary role when the internal governance mechanism is weak. This result validates

the hypothesis and supports the prior Australian going private study by Eddey *et al.* (1996). This result seems logical in the Australian context since internal governance seems to be weak or ineffective in Australia and corporate governance best practice recommendations have been in practice only since 2004 in Australia (Henry, 2004). Therefore, I conclude that this is new evidence for Australia where a going private decision through PE firms might be used as a takeover defense mechanism as suggested by Lehn and Poulsen (1989). Amongst the control variables, LVG and CURR variables appear to be strong predictors of private equity transactions. High leverage dignifies an unhealthy financial condition which may be a characteristic the private equity investors look for in order to opportunistically capture the underlying value of the firm. A high current ratio is an indication of high liquidity, a factor attractive for any takeover especially private equity investment.

Table 6.8: Logit regression of the Effect of External Governance on PE Takeovers

Table 6.8 shows the results of logit regressions of MSO and internal/external governance variables on PE takeovers. MSO is the percentage of ordinary shares held by management. BSO is the percentage of ordinary shares held by board members. BIND is a binary variable that takes the value 1 if the majority of the board members are independent non-executive directors and 0 otherwise. DUAL is a binary variable that takes the value 1 if CEO and Board-Chair are the same person and 0 otherwise. BRDSZ is the number of directors on the company board. THREAT is a binary variable that takes the value 1 if the target firm faces speculation of being taken over within the last 24 months of actual takeover and 0 otherwise. Interaction terms are interacted with MSO dummy where MSO dummy takes the value 1 if MSO > median and 0 otherwise. LVG is the leverage ratio calculated as total liabilities divided by total assets. CURR is the current ratio calculated as current assets divided by current liabilities. FCF is the free cash flow divided by total assets. Free cash flow is calculated as operating cash flow minus interest, taxes and dividends. CAPEX is the spending on new buildings, property and equipment minus depreciation, divided by the book value of total assets. Figures in parentheses represent standard error of estimate. Results reported are heteroskedasticity consistent. ** indicates $p < 0.01$ and * indicates $p < 0.05$.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	-4.610**	-5.301**	-7.037**	-4.903**	-5.429**	-4.503**	-5.186**	-6.447**
	(0.605)	(0.901)	(1.182)	(0.652)	(0.734)	(0.625)	(1.121)	(1.008)
MSO	20.56**	18.03**	22.44**	19.68**	20.16**	19.28**	39.01*	23.53**
	(3.658)	(3.816)	(5.194)	(4.991)	(6.105)	(3.718)	(15.85)	(5.127)
BSO		6.077*	5.743	8.844*				
		(2.509)	(3.128)	(3.731)				
BIND		0.936*	1.110*		1.503*			
		(0.439)	(0.487)		(0.627)			
DUAL		0.009	0.198			-1.415		
		(0.557)	(0.614)			(1.239)		
BRDSZ		-0.008	-0.058				0.096	
		(0.117)	(0.125)				(0.164)	
THREAT			2.828**					2.661**
			(0.569)					(0.807)
BSO*MSO				-8.155				
				(50.68)				
BIND*MSO					-3.490			
					(7.866)			
DUAL*MSO						24.98		
						(19.17)		
BRDSZ*MSO							-3.038	
							(2.555)	
THREAT*MSO								0.543
								(11.46)
LVG	1.925**	2.127**	2.616**	1.782**	2.361**	1.926**	1.955**	2.31**
	(0.656)	(0.713)	(0.753)	(0.635)	(0.725)	(0.677)	(0.694)	(0.715)
CURR	1.354**	1.340**	1.629**	1.293**	1.381**	1.334**	1.347**	1.674**
	(0.216)	(0.244)	(0.321)	(0.232)	(0.234)	(0.215)	(0.216)	(0.301)
FCF	1.083	1.494	1.437	1.394	1.339	1.083	1.212	0.928
	(0.666)	(0.841)	(0.737)	(0.769)	(0.788)	(0.668)	(0.742)	(0.624)
CAPEX	-1.696	-1.286	-1.435	-1.372	-1.423	-1.887	-1.998	-1.857
	(1.160)	(1.145)	(1.502)	(1.119)	(1.165)	(1.361)	(1.337)	(1.410)
McFadden R^2	0.434	0.485	0.602	0.471	0.469	0.438	0.438	0.556
WALD Chi2	71.82	74.00	46.22	73.20	72.88	74.87	70.15	52.13
p-WChi2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Observation	258	258	258	258	258	258	258	258

6.10 Conclusion

This study is based on unique hand-collected data of PEs and Non-PEs from various data sources during the period from 1990 to 2010. Particularly, this study analyses the effect of high managerial ownership and firm-specific governance characteristics in going private through PE takeovers in the Australian context. I find that firms taken over by PE firms exhibit both high managerial ownership and a weak internal governance mechanism. The analysis also reveals that, in the absence of an effective internal governance mechanism, the market for corporate control is active and plays a disciplinary role in Australia. This evidence is new and an addition to the prior Australian studies (Eddey *et al.* 1996; Evans *et al.* 2005) in that the interaction between managerial shareholdings and firm specific corporate governance characteristics in the context of private equity has not been analysed before. I also find a significant non-linearity between managerial shareholdings and internal governance mechanism. Consistent with this, I also present a significant non-linear relationship between managerial ownership and going private. However, I do not find any evidence that an ineffective internal governance mechanism intensifies at high levels of managerial shareholdings.

I also find the current ratio to be highly significant and positive, revealing a strong positive relationship between liquidity and the likelihood of going private. This result is consistent with empirical literature suggesting that going private firms have a significantly higher level of liquidity (Caroll *et al.* 1988; Evans *et al.* 2005). My results are somewhat surprising with regard to the leverage ratio which is significant but takes on a positive value. This result is in contrast to the theory of financial slack as advanced by Jensen and Meckling (1976), but consistent with the opportunistic behaviour by private equity investors. Combined with the results regarding the effect of liquidity, this result suggests that private equity investors in Australia are opportunistic (Chapple *et al.* 2010) in taking advantage of financially distressed firms with high liquidity. I do not find any evidence in support of free cash flows. This is not surprising in that empirical evidence on the role of free cash flow on going private transactions is mixed. The analysis also suggests that capital expenditure is not an important driving force in going private and this is consistent with prior empirical studies on UK and US (Weir and Wright, 2006; Opler and Titman, 1993).

The evidence described in this study has policy implications. The results in this study suggest that internal monitoring mechanism is weak or ineffective in Australian going private firms. Following Netter *et al.* (2009), I also believe that the internal governance mechanism is more important relative to the disciplining mechanism imposed by the traditional market for corporate control. I suggest that good governance practices should be applied as a legal requirement instead of only as a reporting option in the Annual Report. This also raises a need to review the existing corporate governance best practice recommendations in Australia to ensure that internal governance structure plays its role as and when necessary.

CHAPTER 7

CONCLUSION

7.1 Introduction

In this study, an empirically examination is undertaken of how information asymmetry, undervaluation, high managerial ownership and firm-specific corporate governance characteristics affect PE takeovers. The analysis in this study is based on a unique, hand-collected dataset of 129 Australian private equity takeovers spanning a 21 year time period with a matched sample of the same number of traditional takeover target firms. The remainder of this chapter proceeds as follows: Section 2 discusses the summary of the findings from empirical analysis carried out in this study. Section 3 provides a discussion on the contributions of this research. Section 4 summarizes the possible future implications of the findings of this research. The issue of limitations and future research directions are presented in Section 5.

7.2 Summary of Findings

The three aspects examined in this study are presented in Chapters Four, Five and Six. Chapter Four presents the empirical analysis on the aspect of asymmetric information and undervaluation. The aspect of managerial shareholdings and undervaluation is presented in Chapter five. Chapter Six relates to the aspect of both managerial shareholdings and corporate governance practices.

It is hypothesized that information asymmetry and undervaluation will increase the likelihood of going private through PE takeovers. The analysis presented in Chapter Four supports that hypothesis and suggests that undervaluation is a stronger driving force in PE takeovers. This study is the first to model the interplay between information asymmetry and undervaluation in the context of Australian PE takeovers. The results of the predictive model reveal an inverse relationship between undervaluation and the firm's likelihood of going private. The analysis suggests that private equity firms can

play an important role as active investors in enhancing and recognizing the performance of corporations when capital markets do not.

In Chapter Five, I examine the effect of high managerial ownership and undervaluation in going private through PE takeovers in the Australian context. I present strong evidence that firms taken over by PE firms exhibit both high managerial ownership and market undervaluation. This evidence is the first in Australia to model the interaction between managerial shareholdings and undervaluation in the context of private equity. No evidence is found to suggest that undervaluation works as a stronger driving force in PE deals at high level of managerial shareholdings. Thus, the estimations of the predictive model reveal a strong positive relationship between managerial shareholdings and the firm's likelihood to go private and an inverse relationship between undervaluation and the firm's likelihood to go private. The analysis also reveals a non-linear relationship between firm value and managerial shareholdings in Australian target firms.

In Chapter Six, I analyse the effect of high managerial ownership and firm-specific governance characteristics in going private through PE takeovers in the Australian context. I find that firms taken over by PE firms exhibit both high managerial ownership and weak internal governance mechanisms. The analysis also reveals that in the absence of effective internal governance mechanism, the market for corporate control is active and plays a disciplinary role in Australia. This evidence is the first in explaining the interaction between managerial ownership and corporate governance practices in the context of private equity using Australian data. I also reveal some evidence of a non-linear relationship between managerial shareholdings and internal governance mechanism as well as between managerial ownership and going private. Against expectations, I do not find any evidence that an ineffective internal governance mechanism intensifies at high levels of managerial shareholdings.

With regard to the control variables, I find similar evidence across three aspects of private equity that are examined. I find current ratio to be significantly and positively related to the likelihood of going private. This result is consistent with empirical literature suggesting that going private firms have higher levels of liquidity (Caroll *et al.* 1988; Evans *et al.* 2005). I find leverage ratio to be positively related to the likelihood of a firm going private. This result is in contrast to the theory of financial slack as advanced

by Jensen and Meckling (1976), but consistent with opportunistic behaviour by PE investors (Chapple *et al.* 2010). Combined with my results regarding the effect of liquidity, this result suggests that PE investors in Australia are opportunistic in taking advantage of financially unhealthy, but highly liquid, firms with low valuations. I do not find any evidence in support of a free cash flow explanation for going private. My analysis also suggests that capital expenditure is not an important driving force in going private and this is consistent with prior empirical studies on UK and US markets (Weir and Wright, 2006; Opler and Titman, 1993).

7.3 Contributions of the Research

This study makes two major contributions to the literature on Australian private equity takeovers. Prior empirical literature suggests that firms going private suffer from market undervaluation. In addition, literature also suggests that firms going private are more likely to have high managerial shareholdings. The first contribution I make is that the motivations for going private transactions, in general, are applicable to private equity takeovers in particular. The analyses in this study should provide future private equity researchers with confidence that many motivations for private equity transactions may be common across countries.

Secondly, this study is the first Australian study to investigate the influence of asymmetric information, undervaluation, high managerial shareholdings and governance mechanisms in going private through private equity takeovers. In addition, modeling the interplay of asymmetric information, undervaluation, incentive alignment and monitoring mechanism in the context of private equity takeovers has not been done before. In this respect, this study provides an important contribution to the corporate finance literature in general.

7.4 Future Implications

The evidence presented in this study has several implications as follows:
First, it will be of interest to academics and researchers as the analysis carried out in this study is a comprehensive one. The development of the arguments applied to private equity transactions in this study will also be applicable for future research related to private equity transactions. In addition, the investigation carried out in this study is expected to provide a better understanding about the mechanism of private equity

takeovers, the reasons why firms opt out of the public market and the distinguishing features of private equity target firms in Australian context.

Second, this study may assist investors to evaluate firm characteristics in order to analyse the possibility that a firm may engage in going private transactions. The findings in this study might help strengthening the investors' ability to analyse firm characteristics before they actually commit their investment.

Third, the results in this study suggest that high managerial ownership may provide incentives to managers to take their firms private. This finding indicates that existing agency structure does not appear to be sufficient in aligning the interests of outside shareholders and insiders. To ensure a better alignment between the majority shareholders and the corporate managers, policy makers may need to review the existing rules and regulations and propose some new guidelines to be enforced with regard to the incentive devices. Further research is also warranted to determine the exact form of improvement in the rules and regulations required to align the interest between the managers and outside shareholders.

Finally, regulatory authorities may well be interested in reviewing the rules governing takeovers and the role of insiders in takeovers deals. The analysis in this study suggests a weaker or ineffective internal governance structure in Australian going private firms. As a result, there is a need to review the existing corporate governance best practice recommendations to ensure that internal governance structure plays its role as, and when, necessary before the market for corporate control can play its role. I believe that the internal governance mechanism is more important relative to the disciplining mechanism imposed by the traditional market for corporate control. I suggest that good governance practices should be applied as a legal requirement instead of only as a reporting option in the Annual Report.

7.5 Limitations and Future Research Directions

My study explores three different aspects of private equity takeovers in the Australian context. Like all research, this study is not free from limitations. The limitations in this study leading to future research directions are explained as below:

First, the empirical analysis in this study is based on the successful PE transactions. The unsuccessful PE transactions have not been considered and this approach to sample selection might have various biases in itself. The consideration of unsuccessful PE takeovers in future research would produce more acceptable results.

Second, the analysis in this study suggests a non-linear relationship between firm value and managerial shareholdings. Future research might find a clearer solution to this incentive mechanism and the optimal level of MSO and firm value.

Third, high managerial ownership has been found to be an important driving factor in private equity takeovers in Australia. However, I do not observe entrenchment in this study, neither do I analyse the ex-post wealth effects of managers in such transactions. An interesting area of further research would be to analyse the wealth effects of the managers after the firm is actually taken to private. This would shed light on all the ex-post wealth effects of managers in taking their firms private.

Fourth, internal governance structure in Australian target firms is found to be ineffective in this study. However, I analysed governance variables that are available to me. Other internal governance variables such as, compliance rate, number of board meetings, composition of other important committees etc. are not considered in this study. In-depth analysis on the effectiveness of internal governance structure incorporating all these variables could provide further insight into the effectiveness of Australian internal governance structure and this would be an interesting area of future research. In addition, I didn't control for the pre and post ASX CGC best practice recommendations in the empirical analysis. Future research might include this issue to differentiate between pre and post ASX CGC guidelines. This would reveal if changing environments have any impact on the research outcomes.

Finally, the analysis also reveals that private equity firms can play an active investor role from the governance and strategic perspective to enhance performance when public markets are unable to do so. An analysis of the effectiveness of corporate governance by private equity firms would also reveal interesting aspects of the role of private equity investors in the modern capital market.

REFERENCES

Acharya, V. V., O. Gottschalg, M. Hahn, and C. Kehoe. 2010. Corporate Governance and Value Creation: Evidence from Private Equity. *SSRN eLibrary*. http://ssrn.com/paper=1354519 (accessed February 23 2011).

Agha, M. 2011. Leverage, Executive Incentives and Corporate Governance. *Accounting & Finance*, 52 (2): 1-30, http://dx.doi.org/10.1111/j.1467-629X.2011.00450.x.

Akerlof, G. A. 1970. The Market for "Lemons": Quality Uncertainty and the Market Mechanism. *The Quarterly Journal of Economics*, 84 (3): 488-500. http://www.jstor.org/stable/1879431 (accessed 29 October 2011).

Asquith, P., and T. A. Wizman. 1990. Event Risk, Covenants, and Bondholder Returns in Leveraged Buyouts. *Journal of Financial Economics*, 27 (1): 195-213. http://www.sciencedirect.com/science/article/pii/0304405X9090026V (accessed 10 November 2009).

ASX Corporate Governance Council. 2003. *Principles of Good Corporate Governance and Best Practice Recommendations*, Australian Securities Exchange Publications, Sydney, March.

Autore, D., and T. Kovacs. 2005. The Pecking Order Theory and Time-Varying Adverse Selection Costs. *Department of Finance, Pamplin College of Business,* http://www.finance.pamplin.vt.edu/research/0509.pdf (accessed 12 February 2012).

AVCAL. 2010. *AVCAL Year Book*, Australian Private Equity and Venture Capital Association Limited, Sydney. http://www.avcal.com.au/research/data/yearbook (accessed 17 August 2011).

AVCAL. 2010. *PE Fact Sheet*, Australian Private Equity and Venture Capital Association Limited, Sydney. http://avcal.com.au/sites/default/files/AVCAL _PEFactSheet_Sept2010.pdf (accessed 16 August, 2011).

Axelson, U. L. F., P. E. R. StrÖMberg, and M. S. Weisbach. 2009. Why Are Buyouts Levered? The Financial Structure of Private Equity Funds. *The Journal of Finance* 64 (4): 1549-1582. http://dx.doi.org/10.1111/j.1540-6261.2009.01473.x (accessed 21 September 2010).

Benoit, B. 1999. Professional Expenses Prove a Deterrent to Maintaining Stock Market Exposure: But Costs of Public-to-private Deals can also be Considerable. Bertrand Benoit Reports. *Financial Times*, 18-18. ABI/INFORM Complete; ProQuest Central. http://search.proquest.com/ (accessed 10 February 2010).

Berglöf, E., and E.-L. Von Thadden. 1999. The Changing Corporate Governance Paradigm: Implications for Transition and Developing Countries. *SSRN eLibrary*. http://ssrn.com/paper=183708 (accessed 21 April 2010).

Berle, A. A. 1932. *The Modern Corporation and Private Property*. New York MacMillan.

Bharath, S. T., and A. K. Dittmar. 2010. Why Do Firms Use Private Equity to Opt Out of Public Markets? *Review of Financial Studies* 23 (5): 1771-1818. bth. http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=49779657&site=ehost-live (accessed 23 March 2011).

Borstadt, L. 1991. Defending Against Hostile Takeovers: Impact on Shareholder Wealth. *Managerial Finance* 17 (1): 25. http://sfx.lis.curtin.edu.au/sfx_local?sid=google&auinit=L&aulast=Borstadt&atitle=Defending%20Against%20Hostile%20Takeovers%3A%20Impact%20on%20Shareholder%20Wealth&id=doi%3A10.1108%2Feb013664&title=Managerial%20Finance&volume=17&issue=1&date=1991&spage=25&issn=0307-4358 (accessed 22 September 2009).

Brailsford, T. J., B. R. Oliver, and S. L. H. Pua. 2002. On the relation between ownership structure and capital structure. *Accounting & Finance* 42 (1): 1-26.

Cadbury, A. 1992. *Report of the Committee on the Financial Aspects of Corporate Goverance*. London: Committee on the Financial Aspects of Corporate Governance.

Campbell, N. A. 1981. The Geometry of Canonical Variate Analysis. *Systematic Biology* 30 (3): 268. http://sfx.lis.curtin.edu.au/sfx_local?sid=google&auinit=NA&aulast=Campbell&atitle=The%20geometry%20of%20canonical%20variate%20analysis&id=doi%3A10.1093%2Fsysbio%2F30.3.268&title=Systematic%20biology&volume=30&issue=3&date=1981&spage=268&issn=1063-5157 (accessed 20 September 2009)

Carroll, C. A., L. V. Zumpano, and H. W. Elder. 1988. Acquisitions of the 1980's: A Multiple Logit Analysis of Leveraged Buyout Candidates. *RBER, Review of Business and Economic Research* 24 (1): 20-20. ABI/INFORM Complete; ProQuest Central. http://search.proquest.com/docview/196392888?accountid=10382 (accessed 23 May 2010)

Chapple, L., P. M. Clarkson, and J. J. King. 2010. Private Equity Bids in Australia: An Exploratory Study. *Accounting & Finance* 50 (1): 79-102.

Cheffins, B. R., and J. Armour. 2007. The Eclipse of Private Equity. *SSRN eLibrary*. European Corporate Governance Institute, Law Working Paper Series, Belgium 82/2007. http://ssrn.com/paper=982114 (accessed 13 April 2010).

Chemmanur, T. J., and P. Fulghieri. 1999. A Theory of the Going-public Decision. *Review of Financial Studies* 12 (2): 249-279. http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=4233741&site=ehost-live (accessed 13 October 2011).

Chowdhury, A. A. M. U. 2006. Role of Corporate Governance for the Development of Bangladesh Capital Market. *The New Nation*, Ittefaq Group of Publications 17 May.

Claessens, S., S. Djankov, J. P. H. Fan, and L. H. P. Lang. 2002. Disentangling the incentive and entrenchment effects of large shareholdings. *Journal of Finance* 57 (6): 2741-2771. http://www.scopus.com/inward/record.url?eid=2-s2.0-0000200532

&partnerID=40&md5=f82e42ed052ea69ba49b4619c8ecddb6 (accessed 24 July 2010).

Clark, D., L. Lotto, and T. Astuto. 1984. Effective Schooling and School Improvement: A Comparative Analysis of Two Lines to Inquiry. *Educational Administration Quarterly* 20 (2): 41 – 68.

Cornelli, F., and O. Karakas. 2008. Private Equity and Corporate Governance: Do LBOs Have More Effective Boards? *SSRN eLibrary*. http://ssrn.com/paper=1102467 (accessed 11 February 2011).

Corporations Act (CA). 2001. *Australian Corporations' Act* (as amended in 2009). Canberra Office of Legislative Drafting and Publishing, Attorney General's Department, Government of Australia, June.

Cumming, D., D. S. Siegel, and M. Wright. 2007. Private equity, leveraged buyouts and governance. *Journal of Corporate Finance* 13 (4): 439-460. <Go to ISI>://WOS:000249607300001 (accessed 20 October 2010).

DeAngelo, H., L. DeAngelo, and E. M. Rice. 1984. Going Private: Minority Freezeouts and Stockholder Wealth. *Journal of Law and Economics* 27 (2): 367-401. http://www.jstor.org/stable/725581 (accessed 10 July 209).

Demsetz, H. 1983. The Structure of Ownership and the Theory of the Firm. *Journal of Law and Economics* 26 (2): 375-390. http://www.jstor.org/stable/725108 (accessed 5 December 2011).

Doyle, B. and H. Amidon. 1988. *The Anatomy Of A Leveraged Buyout: Profile, Process, Capitalisation, And Implications*. Salamon Brothers Corporate Bond Research/High Yield Research.

Easterbrook, F. H., and D. R. Fischel. 1982. Corporate Control Transactions. *The Yale Law Journal* 91 (4): 698-737. http://www.jstor.org/stable/796036 (accessed 13 August 2011).

Eddey, P. H., K. W. Lee, and S. L. Taylor. 1996. What Motivates Going Private?: An Analysis of Australian Firms. *Accounting and Finance* 36 (1): 31-50.

Edlin, A. S., and J. E. Stiglitz. 1995. Discouraging Rivals: Managerial Rent-Seeking and Economic Inefficiencies. *American Economic Review* 85 (5): 1301-1312. bth. http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=9602051809&site=ehost-live (accessed 12 July 2009).

Ernst & Young. 2010. Global Private Equity Watch, May. http://www.ey.com/Publication/vwLUAssets/global-private-equity-watch-2011/$FILE/Global%20Private%20Equity%20_Watch%202011%20LR.pdf (accessed 3 September 2010).

Evans, J., M. Poa, and S. Rath. 2005. The Financial and Governance Characteristics of Australian Companies Going Private. *International Journal of Business Studies* 13 (1): 1-24.

Ezzamel, M. and R. Watson. 2005. Boards of Directors and the role of Non-executive Directors in the Governance of Corporations. Ch. 5 in Keasey, K., S. Thompson and M. Wright. (eds) *Corporate Governance: Accountability, Enterprise and International Comparisons*. London, Wiley Press.

Fama, E. F. 1980. Agency Problems and the Theory of the Firm. *Journal of Political Economy* 88 (2): 288-307. bth. http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=5182754&site=ehost-live (accessed 23 June 2009).

Fama, E. F., and M. C. Jensen. 1983. Separation of Ownership and Control. *Journal of Law & Economics* 26: 301-326.

Farrell, D. 2007. *The New Power Brokers: How Oil, Asia, Hedge Funds, and Private Equity Are Shaping Global Capital Markets*. Washington DC, McKinsey Global Institute.

Farrer, J. 1997. Reforming Australia's Takeover Defence Laws: What Role for Target Directors? *Australian Journal of Corporate Law*, 8: 1–24.

Fidrmuc, J. P., P. Roosenboom, and D. J. Van Dijk. 2007. *Do Private Equity Investors Take Firms Private for Different Reasons?* Rotterdam. http://www.eu-financial-system.org/fileadmin/content/Dokumente_Events/ninth_conference/fidrmuc_roosenboom_vandijk.pdf (accessed 15 August 2011).

Filatotchev, I., M. Wright, and M. Bleaney. 1999. Privatization, Insider Control and Managerial Entrenchment in Russia. *Economics of Transition* 7 (2): 481-504. bth. http://search.ebscohost.com/ (accessed 13 April 2010).

Florackis, C., and A. Ozkan. 2009a. The Impact of Managerial Entrenchment on Agency Costs: An Empirical Investigation Using UK Panel Data. *European Financial Management* 15 (3): 497-528. http://dx.doi.org/10.1111/j.1468-036X.2007.00418.x (accessed 10 March 2012).

Florackis, C., and A. Ozkan. 2009b. Managerial incentives and corporate leverage: evidence from the United Kingdom. *Accounting & Finance* 49 (3): 531-553.

Frankfurter, G. M. and E. Gunay. 1992. Management Buy-outs: The Sources and Sharing of Wealth Between Insiders and Outside Shareholders, *Quarterly Review of Economics and Finance*, 32 (1): 82 – 95. http://sfx.lis.curtin.edu.au/sfx_local?sid=google&auinit=GM&aulast=Frankfurter&atitle=Management%20buy-outs%3A%20The%20sources%20and%20sharing%20of%20wealth%20between%20insiders%20and%20outside%20shareholders&title=The%20Quarterly%20review%20of%20economics%20%26%20business&volume=32&issue=3&date=1992&spage=82 (accessed 23 May 2010).

Gadiesh, O. and H. MacArthur. 2008. *Lessons From Private Equity Any Company Can Use*. Boston, MA: Harvard Business School Press, USA http://books.google.com.au/books?id=Na9h9bSaCRAC&lpg=PA1&ots=RtZxS59MAE&dq=Gadiesh%2C%20O.%20and%20H.%20MacArthur.%202008.%20Lessons%20From%20Private%20Equity%20Any%20Company%20Can%20Use.%20Boston%2C%20MA%3A%20Harv

ard%20Business%20School%20Press&lr&pg=PP1#v=onepage&q&f=false (accessed 10 August 2011).

Gertner, R. and S. N. Kaplan. 1996. The Value Maximizing Board, University of Chicago http://isc-capital.com/downloads/vmb1296.pdf (accessed 11 August 2010).

Gilligan, J. and M. Wright. 2010. *Private Equity Demystified: An Explanatory Guide*, Financing Change, ICAEW: Corporate Finance Faculty, UK, Second Edition (http://altassets.com/pdfs/icaew_pedemystified.pdf, Accessed on 10 August 2011).

Gompers, P., J. Ishii, and A. Metrick. 2003. Corporate Governance and Equity Prices. *Quarterly Journal of Economics* 118 (1): 107-155. bth. http://search.ebscohost.com/ (accessed 10 August 2009).

Green, S. 1992. The Impact of Ownership and Capital Structure on Managerial Motivation and Strategy in Management Buy-outs: A Cultural Analysis. *Journal of Management Studies* 29 (4): 513-535. bth. http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=4555215&site=ehost-live (accessed 23 February 2011).

Greenbury, 1995. Report of the *Committee on Directors' Remuneration*. London: Committee on Directors' Remuneration, Gee.

Griffin, J. M., and S. N. Wiggins. 1992. Takeovers: Managerial Incompetence or Managerial Shirking? *Economic Inquiry* 30 (2): 355-370. bth. http://search.ebscohost.com/ (accessed 12 August 2009).

Grossman, S. J., and O. D. Hart. 1980. Takeover Bids, the Free-rider Problem, and the Theory of the Corporation. *Bell Journal of Economics* 11 (1): 42-64. bth. http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=5749003&site=ehost-live (accessed 10 August 2009).

Gujarati, D. N. 2005. *Basic Econometrics*. 5th Edition. Singapore: McGraw-Hill.

Guo, S., E. S. Hotchkiss, and W. Song. 2011. Do Buyouts (Still) Create Value? *Journal of Finance* 66 (2): 479-517. bth. http://search.ebscohost.com/

login.aspx?direct=true&db =bth&AN=59527270&site=ehost-live (accessed 23 May 2012).

Hair, J. F., R. E. Anderson, R. L. Tatham and W. C. Black. 1995. *Multivariate Data Analysis*, 4th Edition, Prentice-Hall, New Jersey, USA.

Halpern, P., R. Kieschnick, and W. Rotenberg. 1999. On the Heterogeneity of Leveraged Going Private Transactions. *Review of Financial Studies* 12 (2): 281-309. bth. http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=4233740&site =ehost-live (accessed 20 July 2009).

Hampel, R. 1998. *Report on the Committee on Corporate Governance*, London: Committee of Corporate Governance, Gee.

Henry, D. 2004. Corporate Governance and Ownership Structure of Target Companies and the Outcome of Takeovers. *Pacific-Basin Finance Journal* 12 (4): 419-444. http://sfx.lis.curtin.edu.au/sfx_local?sid=google&auinit=D&aulast=Henry&atitle=C orporate%20governance%20and%20ownership%20structure%20of%20target%20co mpanies%20and%20the%20outcome%20of%20takeovers&id=doi%3A10.1016%2F j.pacfin.2003.09.004&title=Pacific-basin%20finance%20journal&volume=12&issue =4&date=2004&spage =419&issn=0927-538X (accessed 11 July 2009).

Henry, D. 2005. Directors' Recommendations in Takeovers: An Agency and Governance Analysis. *Journal of Business Finance & Accounting* 32 (1-2): 129-159. http://sfx.lis.curtin.edu.au/sfx_local?sid=google&auinit=D&aulast=Henry&atitle=Di rectors%E2%80%99%20recommendations%20in%20takeovers%3A%20An%20age ncy%20and%20governance%20analysis&id=doi%3A10.1111%2Fj.0306- 686X.2005.00590.x&title=Journal%20of%20business%20finance%20%26%20acco unting&volume=32&issue=1%E2%80%902&date=2005&spage=129&issn=0306- 686X (accessed 11 July 2009).

Henry, D. 2010. Agency Costs, Ownership Structure and Corporate Governance Compliance: A Private Contracting Perspective. *Pacific-Basin Finance Journal* 18 (1):   24-46.   http://sfx.lis.curtin.edu.au/sfx_local?sid=google&auinit=D&aulast

=Henry&atitle=Agency%20costs%2C%20ownership%20structure%20and%20corp
orate%20governance%20compliance%3A%20A%20private%20contracting%20pers
pective&id=doi%3A10.1016%2Fj.pacfin.2009.05.004&title=Pacific-basin%20
finance%20journal&volume=18&issue=1&date=2010&spage=24&issn=0927-538X
(accessed 11 October 2011).

Hill, J. G. 2005. Regulatory Responses to Global Corporate Scandals. *Wisconsin International Law Journal* 23 (3): 367-416. lft. http://search.ebscohost.com/login.aspx?direct=true&db=lft&AN=502602396&site=ehost-live (accessed 23 August 2011).

Hill, J. G. 2010. The Architecture of Corporate Governance in Australia - Corporate Governance - National Report: Australia. Sydney Law School Research Paper No. 10/75, August. SSRN: http://ssrn.com/abstract=1657810 (accessed 5 November 2011).

Holmstrom, B., and S. N. Kaplan. 2001. Corporate Governance and Merger Activity in the United States: Making Sense of the 1980s and 1990s. *Journal of Economic Perspectives* 15 (2): 121-144. bth. http://search.ebscohost.com (accessed 12 May 2010).

Jensen, M. C. 1986. Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers. *American Economic Review* 76 (2): 323-329. bth. http://search.ebscohost.com/ login.aspx?direct=true&db=bth&AN=4496829&site=ehost-live (accessed 10 June 2009).

Jensen, M. C. 1989. Eclipse of the Public Corporation. *Harvard Business Review* 67 (5): 61-74. bth. http://search.ebscohost.com (accessed 11 June 2009).

Jensen, M. C. 2007. The Economic Case for Private Equity. *Harvard Business School Centennial Conference on Private Equity*, New York City, 13 February.

Jensen, M. C., and K. J. Murphy. 1990. Performance Pay and Top-Management Incentives. *Journal of Political Economy* 98 (2): 225-264. http://www.jstor.org/stable/2937665 (accessed 12 June 2009).

Jensen, M. C., and R. S. Ruback. 1983. The Market for Corporate Control. *Journal of Financial Economics* 11 (1-4): 5-50. bth. http://search.ebscohost.com (accessed 10 June 2009).

Jensen, M. C., and W. H. Meckling. 1976. Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. *Journal of Financial Economics* 3 (4): 305-360. http://www.sciencedirect.com/science/article/pii/0304405X7690026X (accessed 16 July 2009).

Jensen, M., S. Kaplan, C. Ferenbach, M. Feldberg, J. Moon, B. Hoesterey, and C. Davis. 2006. Morgan Stanley Roundtable on Private Equity and Its Import for Public Companies. *Journal of Applied Corporate Finance* 18 (3): 8-37. bth. http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=22554483&site=ehost-live (accessed 23 August 2009).

Kaplan, S. 1989. The Effects of Management Buyouts on Operating Performance and Value. *Journal of Financial Economics* 24 (2): 217-254. bth. http://search.ebscohost.com (accessed 25 August 2009).

Kaplan, S. N., and P. Strömberg. 2009. Leveraged Buyouts and Private Equity. *Journal of Economic Perspectives* 23 (1): 121-146. bth. http://search.ebscohost.com (accessed 28 March 2010).

Keasey, K., S. Thompson and M. Wright, 2005. *Corporate Governance: Accountability, Enterprise and International Comparisons*. John Wiley & Sons.

Keasey, K., S. Thompson, and M. Wright. 1997. Introduction: The Corporate Governance Problem-Competing Diagnoses and Solutions, in Keasey K, Thompson S and Wright M (eds), *Corporate Governance: Economics, Management, and Financial Issues*. Oxford University Press, Oxford.

Khan, S. E. 2007. Institutionalization of Corporate Governance in Bangladesh. *In the DCCI-CIPE, ERRA Project*. The Dhaka Chamber of Commerce and Industry (DCCI), Bangladesh.

Kieschnick, R. L. 1998. Free Cash Flow and Stockholder Gains in Going Private Transactions Revisited. *Journal of Business Finance & Accounting* 25 (1/2): 187-202. bth. http://search.ebscohost.com (accessed 23July 2009).

Kini, O., W. Kracaw, and S. Mian. 1995. Corporate Takeovers, Firm Performance, and Board Composition. *Journal of Corporate Finance* 1 (3–4): 383-412. http://www.sciencedirect.com (accessed 27 August 2009).

Kleiman, R. T. 1988. The Shareholder Gains from Leveraged Cash-outs: Some Preliminary Evidence. *Journal of Applied Corporate Finance* 1 (1): 46-53.

Kosedag, A., and W. R. Lane. 2002. Is it Free Cash Flow, Tax Savings, or Neither? An Empirical Confirmation of Two Leading Going-private Explanations: The Case of ReLBOs. *Journal of Business Finance & Accounting* 29 (1/2): 257-271. bth. http://search.ebscohost.com (accessed 13 February 2010).

Lawrence, J. J., and G. P. Stapledon. 1999. Is Board Composition Important? A Study of Listed Australian Companies. *SSRN eLibrary*. http://ssrn.com/paper=193528 (accessed 12 March 2010).

Lehn, K., and A. Poulsen. 1989. Free Cash Flow and Stockholder Grains in Going Private Transactions. *Journal of Finance* 44 (3): 771-787. bth. http://search.ebscohost.com (accessed 12 August 2009).

Leland, H. E., and D. H. Pyle. 1977. Informational Asymmetries, Financial Structure, and Financial Intermediation *Journal of Finance* 32 (2): 371-387. bth. http://search.ebscohost.com (accessed 20 July 2009).

Licht, M. H. 1998. 'Multiple Regression and Correlation' in Grimm, L. G. And P. R. Yarnold (eds.), *Reading and Understanding Multivariate Statistics*. American Psychological Association, Washington DC, USA.

Lichtenberg, F. R., and D. Siegel. 1990. The Effects of Leveraged Buyouts on Productivity and Related Aspects of Firm Behavior. *Journal of Financial Economics* 27 (1): 165-194. bth. http://search.ebscohost.com (accessed 19 July 2009).

Lowenstein, L. 1985. Management Buyouts. *Columbia Law Review* 85 (4): 730-784. http://www.jstor.org (accessed 26 September 2009).

Maati, J. 1999. *Le Gouvernment d'Entrprise*, De Boeck Universite, Paris and Bruxelles.

Maddala, G. S. 1991. A Perspective on the Use of Limited-Dependent and Qualitative Variables Models in Accounting Research. *Accounting Review* 66 (4): 788-807. bth. http://search.ebscohost.com (accessed 11 November 2011).

Malmgren, H. B. 1961. Information, Expectations and the Theory of the Firm. *Quarterly Journal of Economics* 75 (3): 399-421. bth. http://search.ebscohost.com/ (accessed 9 August 2010).

Malone, S. C. 1989. Characteristics of Smaller Company Leveraged Buyouts. *Journal of Business Venturing* 4 (5): 349-359. bth. http://search.ebscohost.com (accessed 15 August 2011).

Manne, H. G. 1965. Mergers and the Market for Corporate Control. *Journal of Political Economy* 73 (2): 110-120. bth. http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=5053539&site=ehost-live (accessed 26 June 2009).

Manry, D., and K. Nathan. 1999. Greenmail Premia, Board Composition and Management Shareholdings. *Journal of Corporate Finance* 5 (4): 369-382. http://www.sciencedirect.com/science/article/pii/S0929119999000073 (accessed 16 December 2011).

Maupin, R. J. 1987. Financial and Stock Market Variables as Predictors of Management Buyouts. *Strategic Management Journal* 8 (4): 319-327. bth. http://search.ebscohost.com/ (accessed 10 August 2011).

Maupin, R. J., C. M. Bidwell, and A. K. Ortegren. 1984. An Empirical Investigation of the Characteristics of Publicly-quoted Corporations Which Change to Closely-held Ownership Through Management Buyouts. *Journal of Business Finance & Accounting* 11 (4): 435-450. bth. http://search.ebscohost.com (accessed 10 August 2011).

Mayanja, J. 1999. Reforming Australia's Takeover Defence Laws: What Role for Target Directors? A Reply and Extension, *Australian Journal of Corporate Law*, 10:162–91.

Mayer, F. 1997. Corporate Governance, Competition and Performance. In Deakin, S. and A Hughes (eds.) *Enterprise and Community: New Directions in Corporate Governance*, Oxford, Blackwell Publishers.

Mehran, H., and S. Peristiani. 2010. Financial Visibility and the Decision to Go Private. *Review of Financial Studies* 23 (2): 519-547. bth. http://search.ebscohost.com (accessed 20 October 2011).

Merton, R. C. 1987. A Simple Model of Capital Market Equilibrium with Incomplete Information. *Journal of Finance* 42 (3): 483-510. bth. http://search.ebscohost.com (accessed 10 April 2010).

Metrick, A. and A. Yasuda. 2011. A Model of Private Equity Fund Compensation, *NBER Working Paper No.* 17568, November.

Miller, D. 1983. *Handbook of Research Design and Social Measurement*. 4th Edition. London: Longman.

Morck, R., A. Shleifer, and R. W. Vishny. 1988. Management Ownership and Market Valuation: An Empirical Analysis. *Journal of Financial Economics* 20 (0): 293-315. http://www.sciencedirect.com/science/article/pii/0304405X88900487 (accessed 12 July 2009).

Morrison, J. 2004. Legislating for Good Corporate Governance. *Journal of Corporate Citizenship* (15): 121-133. bth. http://search.ebscohost.com (accessed 19 October 2009).

Murphy, K. 1999. Executive Compensation. In Ashenfelter, O. and D. Card. (eds.) *Handbook of Labor Economics*, Amsterdam: North-Holland.

Murphy, K. J. 1985. Corporate Performance and Managerial Remuneration: An Empirical Analysis. *Journal of Accounting & Economics* 7 (1/2/3): 11-42. bth. http://search.ebscohost.com (accessed 13 September 2009).

Myers, S. C. 1984. The Capital Structure Puzzle. *Journal of Finance* 39 (3): 575-592. bth. http://search.ebscohost.com (accessed 8 July 2009).

Myers, S. C., and N. S. Majluf. 1984. Corporate Financing and Investment Decisions When Firms Have Information that Investors Do Not Have. *Journal of Financial Economics* 13 (2): 187-221. bth. http://search.ebscohost.com (accessed 8 July 2009).

Netter, J., A. Poulsen, and M. Stegemoller. 2009. The Rise of Corporate Governance in Corporate Control Research. *Journal of Corporate Finance* 15 (1): 1-9. http://www.sciencedirect.com/science/article/pii/S0929119908000989 (accessed 20 March 2012).

North, D. S. 2001. The Role of Managerial Incentives in Corporate Acquisitions: The 1990s Evidence. *Journal of Corporate Finance* 7 (2): 125-149. doi: 10.1016/s0929-1199(01)00017-7

Nottage, L. R. 2008. Corporate Governance and M&A in Australia: An Overview for Assessing Japan and the 'Americanisation' Thesis. *Sydney Law School Research Paper*, http://ssrn.com/abstract=1105639 (accessed 29 November 2011).

Novikova, J. 2004. *The Impact of Internal Corporate Governance System on Firms Innovative Activities,* PhD Dissertation, Division of Innovation, Lund Institute of Technology, Lund University, Sweden, January.

Opler, T., and S. Titman. 1993. The Determinants of Leveraged Buyout Activity: Free Cash Flow vs. Financial Distress Costs. *Journal of Finance* 48 (5): 1985-1999. bth. http://search.ebscohost.com (accessed 29 June 2009).

O'Sullivan, N., and P. Wong. 1998. The Impact of Board Composition and Ownership on the Nature and Outcome of UK Takeovers. *Corporate Governance: An International Review* 6 (2): 92-100.

O'Sullivan, N., and P. Wong. 1999. Board composition, ownership structure and hostile takeovers: some UK evidence. *Accounting & Business Research* 29 (2): 139-155.

Pagan, A. 1984. Econometric Issues in the Analysis of Regressions with Generated Regressors. *International Economic Review* 25 (1): 221-247. bth. http://search.ebscohost.com (accessed 20 April 2012).

Peng, C. J., K. L. Lee and G. N. Ingersoll. 2002. An Introduction to Logistic Regression Analysis and Reporting. *The Journal of Educational Research*, 96 (1): 2-14. http://bit.csc.lsu.edu/~jianhua/emrah.pdf (accessed 21 November 2011).

Phan, P. H., and C. W. L. Hill. 1995. Organizational Restructuring and Economic Performance in Leveraged Buyouts: An Ex Post Study. *Academy of Management Journal* 38 (3): 704-739. bth. http://search.ebscohost.com (accessed 5 August 2011).

Powell, R. G. 1997. Modelling Takeover Likelihood. *Journal of Business Finance & Accounting* 24 (7/8): 1009-1030. bth. http://search.ebscohost.com (accessed 23 August 2009).

Randøy, T., and J. Nielsen. 2002. Company Performance, Corporate Governance, and CEO Compensation in Norway and Sweden. *Journal of Management & Governance* 6 (1): 57-81. bth. http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=16904341&site=ehost-live (accessed 12 May 2009).

Renneboog, L. and T. Simons. 2005. Public-to-Private Transactions: LBOs, MBOs, MBIs and IBOs, *Tilec Discussion Paper No. 023*, Tilburg University, August.

Renneboog, L., T. Simons, and M. Wright. 2007. Why do Public Firms Go Private in the UK? The impact of Private Equity Investors, Incentive Realignment and Undervaluation. *Journal of Corporate Finance* 13 (4): 591-628. bth. http://search.ebscohost.com (accessed 3 September 2009).

Shleifer, A., and R. W. Vishny. 1986. Large Shareholders and Corporate Control. *Journal of Political Economy* 94 (3): 461-488. bth. http://search.ebscohost.com (accessed 10 June 2009).

Shleifer, A., and R. W. Vishny. 1989. Management Entrenchment: The Case of Manager-specific Investments. *Journal of Financial Economics* 25 (1): 123-139. http://www.sciencedirect.com (accessed 10 June 2009).

Shleifer, A., and R. W. Vishny. 1997. A Survey of Corporate Governance. *Journal of Finance* 52 (2): 737-783. bth. http://search.ebscohost.com (accessed 9 June 2009).

Simon, D., and A. Hughes. 1997. Comparative Corporate Governance: An Interdisciplinary Agenda. *Journal of Law and Society* 24 (1): 1-9. http://www.jstor.org/stable/1410599 (accessed 9 June 2009).

Singh, H. 1990. Management Buyouts: Distinguishing Characteristics and Operating Changes Prior to Public Offering. *Strategic Management Journal* 11 (4): 111-129. bth. http://search.ebscohost.com (accessed 13 June 2009).

Smiley, R. 1976. Tender Offers, Transactions Costs and the Theory of the Firm. *Review of Economics & Statistics* 58 (1): 22. bth. http://search.ebscohost.com (accessed 14 June 2009).

Smith Jr, C. W., and J. B. Warner. 1979. On Financial Contracting: An Analysis of Bond Covenants. *Journal of Financial Economics* 7 (2): 117-161. bth. http://search.ebscohost.com (accessed 19 June 2009).

Stromberg, P. 2007. The New Demography of Private Equity. *Swedish Institute for Financial Research,* Stockholm School of Economics, CEPR, and NBER, December, http://www.sifr.org/pelle.html (accessed 10 August 2011).

Stuart, T. E., and S. Yim. 2010. Board interlocks and the propensity to be targeted in private equity transactions. *Journal of Financial Economics* 97 (1): 174-189. http://www.sciencedirect.com/science/article/pii/S0304405X10000553 (accessed 21 July 2011).

Stulz, R. M. 1988. Managerial Control of Voting Rights: Financing Policies and the Market for Corporate Control. *Journal of Financial Economics* 20 (1/2): 25-54. bth. http://search.ebscohost.com (accessed 10 December 2011).

Tabachnik, B. G. and L. S. Fidell. 1996. *Using Multivariate Statistics*, Third Edition, Harper Collins, New York, USA.

Tadesse, S. 2004. The Allocation and Monitoring Role of Capital Markets: Theory and International Evidence. *Journal of Financial & Quantitative Analysis* 39 (4): 701-730. bth. http://search.ebscohost.com (accessed 8 June 2009).

Talukdar, B. U. M. 2007. *Corporate Governance: An Essential Mechanism to Curb Malpractices by Organizations*. Policy Analysis Unit (PAU), Research Department, Bangladesh Bank, Dhaka, July.

Torabzadeh, K. M., and W. J. Bertin. 1987. Leveraged Buyouts and Shareholder Returns. *Journal of Financial Research* 10 (4): 313-319. bth. http://search.ebscohost.com (accessed 20 June 2009).

Walkling, R. A., and M. S. Long. 1984. Agency Theory, Managerial Welfare, and Takeover Bid Rescue. *RAND Journal of Economics* 15 (1): 54-68. bth. http://search.ebscohost.com (accessed 12 July 2009).

Weir, C., and M. Wright. 2006. Governance and Takeovers: are Public-to-private Transactions different from Traditional Acquisitions of Listed Corporations? *Accounting & Business Research (Wolters Kluwer UK)* 36 (4): 289-207.

Weir, C., D. Laing, and M. Wright. 2005a. Incentive Effects, Monitoring Mechanisms and the Market for Corporate Control: An Analysis of the Factors Affecting Public to Private Transactions in the UK. *Journal of Business Finance & Accounting* 32 (5/6): 909-943.

Weir, C., D. Laing, and M. Wright. 2005b. Undervaluation, Private Information, Agency Costs and the Decision to Go Private. *Applied Financial Economics* 15 (13): 947-961.

Weir, C., P. Jones, and M. Wright. 2007. Public to Private Transactions, Private Equity and Performance in the UK: An Empirical Analysis of the Impact of Going Private. *SSRN eLibrary*. http://ssrn.com/paper=1138616 (accessed 12 August 2010).

Westcott, M. 2009. Private Equity in Australia. *Journal of industrial relations* 51 (4): 529.