



Do private equity target firms exhibit less effectual governance structures?

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Abstract

We investigated the unique corporate governance structure of Australian private equity target firms to establish the disciplinary motive underpinning a corporate buy-out and tested our expectations using a sample of 43 publicly listed private equity target firms and a control sample of 182 conventional corporate targets, matched by year and industry, for the period 2001–2010. The findings provide evidence of a less effectual corporate governance structure for private equity target firms. In particular, our analysis reveals that, relative to our benchmark sample, private equity target firms have larger boards, more board meetings and a greater inside ownership. Similarly, our results show that the probability of a firm being a private equity target increases with board size, percentage of insider directors, board meetings and CEO ownership. Consistent with results from work elsewhere, private equity target firms appear to perform ex post reactive monitoring roles rather than ex ante proactive roles.

JEL Classification: **G11, G14, G34**

Keywords

Private equity, corporate governance, inside ownership, board size

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1. Introduction

The threat of an underperforming firm being acquired by a new management team imposes a discipline on both the public capital markets and the firm's operations. In addition to mergers, acquisitions and takeovers, a corporate buyout is also considered to be one of the major mechanisms for harnessing control (Manne, 1965). In Australia, the market for corporate control is well developed. The global private equity investment sector, prior to the market collapse in late-2007, experienced unparalleled activity and unprecedented levels of growth. In the first half of 2007, private equity accounted for approximately 25% of world-wide merger and acquisition activity by value. In 2006, global leveraged buyouts (LBO) amounted to over US\$800 billion, more than double the level in the previous year and more than six times higher than in the year 2000. The value of Australian private equity transactions announced and endorsed by target company boards also surged, reaching to AU\$26 billion in 2006, compared to an average of approximately AU\$2 billion in the period 2000–2005,¹ an indication of their increasing importance for corporate control in the Australian financial landscape.

Given this increasing importance and the associated growing level of interest that private equity transactions in Australia attract, arguably we require an improved understanding of this investment sector. However, to date, research on private equity research, particularly in the Australian context, has been relatively limited. To this end, this study investigates the governance structures which characterise Australian private equity bids, with the aim of identifying in more detail those which are attractive as private equity takeover bids. By examining the corporate governance attributes of private equity takeover target firms relative to those of corporate target firms, we seek to further inform the debate regarding the true nature of the going-private transaction, friendly versus hostile, and provide additional insights into how private equity players select their targets.

While a substantial quantity of empirical literature has endeavoured to characterise private equity, there still remains no classic, consistent definition. Prior research tends to present a plethora of differing private equity interpretations, each dependent upon the specific needs and constraints of the individual paper. For the purpose of this study, the term private equity refers to:

...the acquisition of a public firm, by a group of sophisticated investors, who take the company 'private' by delisting it from the stock exchange.¹

This definition is extracted from the Reserve Bank of Australia's (RBA) 2007 Financial Stability Review and is consistent with the definition employed by Chapple et al. (2010), in their Australian private equity research.

Prior studies recognise some generally accepted theories regarding the motivations of participants involved in traditional merger and acquisition deals. Typically, the empirical literature regards the motivations for conventional takeovers as either synergistic or disciplinary (Morck et al., 1988). Synergistic acquisitions are often documented as friendly in nature, with the key motivating force being the potential benefits (synergies) that may be derived (Martin and McConnell, 1991). Disciplinary takeovers are somewhat different. They are commonly associated with hostile bids and are conventionally viewed as a key mechanism for disciplining underperforming managers (Manne, 1965; Weisbach, 1992). Underperforming management, in the sense that the firm's decision makers are not pursuing shareholder wealth maximisation strategies, is often a direct result of a misalignment of interests between a firm's shareholders and its managers (Jensen and Meckling, 1976). In the presence of less effectual corporate governance structures, this misalignment can give rise to value-eroding agency costs. Thus, the primary way in which a

disciplinary takeover derives value is by realigning the interests of a firm's owners and managers, thereby, mitigating agency costs (Jensen, 1986).

In this regard, Chapple et al. (2010) and Weir et al. (2006) assert that the going-private transaction occupies a homogenous place in the market, where its role appears to be as a disciplinary, friendly acquirer. In particular, the hallmarks of the Australian private equity investment sector, as outlined by the Australian Private Equity and Venture Capital Association Limited (AVCAL) and echoed by the RBA, the Australian Council for Super Investors (ACSI) and Austin and Tuch (2008), are highly suggestive of the disciplinary motivation for takeovers, as presented in the classic literature (Jensen, 1988). This suggests that private equity transactions possess characteristics which resemble neither purely traditional friendly, nor purely conventional disciplinary takeovers. Further, given that private equity bidders typically do not focus simply on one specific industry, the synergistic motivation for a private equity takeover is somewhat less palatable (Chapple et al., 2010). Hence, Chapple et al. (2011) expanded their research by examining first and second order indications of bid friendliness, in an attempt to substantiate the friendly nature of private equity transactions. Both Chapple et al. (2011) and Weir et al. (2006) argue that private equity bidders occupy a unique place in the market where their role appears to be as 'disciplinary, friendly acquirers'.

Firms which encounter hostile bids are theoretically expected to be characterised by less effectual governance structures and hence substantial agency costs (Shivdasani, 1993; Weir et al., 2006; Weisbach, 1992). Jensen (2007) argues that private equity enables the capture of value destroyed by agency problems, particularly in the mature segment of the market. To date, however, no formal academic investigation into the disciplinary nature of Australian private equity bids has been conducted. Due to the sector's recent growth, heightened level of media attention and sparse empirical literature, such a study is justified. The statistical research design used in this paper affords an in-depth inspection of private equity target firm characteristics and compares such attributes to a control sample of firms targeted by non-private equity bidders.

As fiscal year 2010 began, private equity in the domestic marketplace, much like the private equity investment sector around the world, appeared to be mired in a deep cyclical downturn.² Capital to finance new going-private transactions had all but dried up and portfolio-companies' balance sheets were not looking as strong as they once had. However, if the financial press is any indication of things to come, all signs point to a return to mergers and acquisition and initial public offering (IPO) activities at a level not seen since pre-recessionary times.³ This paper is thus further motivated by the anticipated forthcoming resurgence of domestic and international private equity.

This study uses extant literature on empirical mergers and acquisitions, corporate governance and going-private activities to develop propositions to investigate the implicit hostility in the Australian private equity investment sector. In particular, we hypothesise that private equity target firms are characterised by less effectual governance structures in terms of board structure, ownership structure and managerial power, when compared to the corporate governance structures of conventional corporate takeover targets.⁴ We test our expectations using a sample of 43 publicly listed private equity target firms and a benchmark control sample of 182 conventional corporate targets, matched by year and industry, for the period 2001–2010. Our univariate analysis reveals significant differences between the corporate governance characteristics of private equity firms and the corporate governance structure present in the matched corporate sample. Specifically, we find that, relative to our benchmark sample, private equity firms have larger boards and a greater number of audit committee, compensation committee and board meetings. Further, we find that firms which attract bids from private equity partnerships are typically characterised by a higher level of insider ownership, when compared to the corporate sample. Conversely, we find no significant differences between the ownership compositions of private equity and corporate targets.

The multivariate testing results indicate that private equity targets are more likely to have boards which perform a less effectual monitoring role and top management which is more likely to be entrenched in the firm. Here, we find that both the number of board insiders and the size of the board are inversely related to the likelihood of a private equity takeover bid. In addition, we find a positive relation between CEO shareholdings and the probability of a private equity takeover offer. Consistent with our univariate analysis, we find no evidence of a difference between the ownership structures of private equity and matched corporate targets.

This study is similar to those of Chapple et al. (2010, 2011) and Osborne et al. (2012) who sought insights into the nature of private equity transactions in Australia and elsewhere by studying target firm characteristics such as size, profitability and cash flow. However, it is an extension of these studies, in several important ways. To the best of our knowledge there has been no formal research conducted which seeks to explain the relationship between Australian private equity transactions and target firm corporate governance structures. Thus the innovation of this paper rests in the unexplored relation between the disciplinary theory of takeovers and the Australian private equity investment sector. It also strengthens the limited empirical private equity literature by assessing the homogeneity of firms which attract private equity attention. This study examines target firm corporate governance characteristics and compares these data across a sample comprising private equity bids and a sample of control firm targets. As such, the sheer size and growth of the private equity investment sector in recent years renders this topic not only material, but also current.

Compared to Chapple et al. (2010, 2011), our study uses a unique, hand collected larger data set to examine the homogenous governance attributes of Australian private equity target firms. Chapple et al. (2010) study a sample of 23 listed private equity targets during 2001–2007 and a matched benchmark sample of 81 corporate targets; our sample includes 43 publicly listed private equity target firms and a matched benchmark control sample of 182 conventional corporate targets for the period 2001–2010. We argue that the results of this study should be of interest to a number of market commentators, including, but not limited to, industry practitioners, policy-makers and academics. Professionals can benefit from this study because it focuses on material, current events occurring in the Australian marketplace and offers a comprehensive understanding of private equity target firm selection. Similarly, this research is also likely to be of benefit to those Australian policy-makers who have been closely monitoring the impact of an increased private equity presence in Australia. Lastly, it sets a platform for incremental studies dealing with the Australian mergers and acquisition and private equity markets.

The remainder of the paper is structured as follows. Section 2 presents private equity's institutional setting by analyzing the typical structure of a private equity fund and introducing the various viewpoints held by Australian market commentators in relation to the private equity investment sector. Section 3 reviews the literature on takeover and corporate governance, leading to the development of our hypotheses. Section 4 describes the econometric model and empirical measures and Section 5 presents the relevant data. Section 6 presents the empirical results and, finally, Section 7 offers our conclusions.

2. Institutional setting

Unlike previous private equity 'boom' periods, such as the leveraged buyout boom of the late-1980s, private equity's most recent expansion appeared to be a truly universal phenomenon, with unusual activity not concentrated solely in the United States but also rampant throughout Europe and the Asia Pacific.⁵ Fuelled by international trends, favourable macroeconomic conditions and low global interests rates, Australia's private equity investment sector reached record levels in 2006–2007.⁶

2.1. Features of private equity funds

Private equity is an investment asset which encompasses a broad range of private takeover transactions, including, but not limited to: management buyouts (MBOs); leveraged buyouts (LBOs); venture capital (VC); mid-stage company financing; and distressed firm investment.⁷ For the purpose of this study, we use the terms private equity, corporate buyout and going-private takeover interchangeably, in order to encompass transactions such as LBOs and MBOs. In the Australian takeover market, the majority of going-private transactions can be appropriately described as either LBOs or MBOs.⁸

Private equity partnerships are characterised by a number of defining attributes which explicitly differentiate them from conventional corporate bidders. For instance, unlike many typical corporate takeover bidders, virtually all private equity funds are structured as limited partnerships. These partnerships comprise a private equity fund manager who acts as a general partner (GP) and large 'sophisticated' investors, who act as limited partners (LPs) (Metrick and Yasuda, 2010). The GPs oversee the fund's investments and are ultimately liable for any legal debts and obligations. For their services, fund managers are compensated via management fees derived from both the size of the fund and the performance of the investments. The LPs, on the other hand, are 'sophisticated' (rather than retail) investors who provide the majority of a fund's equity capital. Before deciding whether to invest in a particular private equity fund or which specific buyout fund to invest in, LPs typically undertake due diligence of the GPs, often over a number of years, in order to assess their 'track record'. LP investors generally include, but are not limited to, superannuation/pension funds, insurance companies, banks and university endowments.

Buyout funds are typically 'closed-end' rather than 'ever-green', meaning that they are established for a pre-determined fixed period of time. Such limited partnerships usually last for periods of up to 10 to 12 years, after which all fund investments are realised and returned to investors. The long-term nature of the typical private equity fund aptly reflects the long-term investment focus of the typical GP. Subsequently, buyout funds offer very little in the way of investment liquidity.

Realised returns from private equity funds are derived from the sale of portfolio companies. Due to the finite nature and limited partnership structure of the typical private equity fund, GPs manage the investments with a beneficial sale in mind. There are three primary exit strategies available to private equity funds: 'initial public offerings' (IPO), 'trade sales', or 'secondary sales', the most popular of which is the IPO (Masulis and Thomas, 2009). As a result, private equity partnerships prefer to operate in environments characterised by healthy exchange-traded markets.

AVCAL contends that the level of returns typically targeted by the Australian private equity investment sector is five hundred basis points above that of the returns generated by public equity markets. Australia's private equity returns have been largely consistent with this target. Successful private equity funds, those that have earned their cost-of-capital after payments to GPs (Metrick and Yasuda, 2010), attract new LPs to subsequent funds, because the GP's performance is interpreted as 'skill' rather than 'luck'.

However, perhaps the important distinctive feature of the private equity fund is the level of debt commonly employed in order to magnify its buying power. Renneboog and Simons (2005) posit that virtually all private equity transactions are financed by borrowing substantially beyond industry gearing averages. Aside from being able to make additional investments with a given allotment of capital, fund managers are also able to earn LPs a higher rate of return on their invested capital. This feature is especially pronounced in LBOs.

2.2. Hallmarks of the Australian private equity investment sector

Several market commentators have attempted to delineate the unique hallmarks that characterise the Australian private equity investment sector. These hallmarks, proposed by policy-makers,

professionals and academics, not only summarise the primary objectives and goals of this distinctive asset class but also distinguish it from alternative methods of attaining corporate control. By investigating such characteristics, one is able to acquire a more comprehensive understanding of the typical nature of private equity, as perceived by differing market commentators. Prior literature such as Chapple et al. (2010) has even used such characteristics as a research framework to investigate target firm attributes and takeover bid similarities.

Appendix 1 presents the distinctive characteristics of the Australian private equity investment sector, as viewed by four differing market commentators. Perhaps the key feature of Appendix 1 is the striking similarities between the private equity characteristics described by these commentators (AVCAL, RBA, Austin and Tuch (2008) and ACSI). These aforementioned hallmarks of private equity investment suggest that policy-makers, academics and professionals share a common perspective regarding the motivations and benefits of private equity. For instance, all four commentators suggest that one of the key attributes of the Australian private equity investment sector relates to the alignment of interests between a firm's managers and equity holders. Another distinguishing characteristic of the private equity investment sector, identified by a number of commentators, concerns the long-term focus of the fund. Finally, a number of commentators comment on the disciplinary effect of debt. These hallmarks are also consistent with the qualitative empirical literature on the private equity investment sector (Austin and Tuch, 2008; Masulis and Thomas, 2009).

The hallmarks put forward by the aforementioned commentators appear to be consistent with, and highly suggestive of, the disciplinary (hostile) theory of takeovers (Jensen, 1988). The disciplinary theory of takeovers, also termed the inefficient management hypothesis, as put forward by Manne (1965) and Jensen and Meckling (1976), describes a scenario in which underperforming managers – those not pursuing Manne's (1965) 'shareholder wealth maximization strategies' – are effectively penalised by the market and replaced by alternative management teams, who believe they can govern the company more effectively. Jensen (1986) identifies the agency problem, endemic in the modern corporation, and argues that the disciplinary takeover can effectively re-align the interests of shareholders and managers, eliminating value-eroding agency costs.

3. Literature review and hypotheses development

Corporate governance structures are used by firms in an attempt to re-align the interests of owners and managers, essentially mitigating the agency problem endemic in listed firms. With ineffectual governance structures, the interests of managers are expected to deviate from those of the owners, providing management the opportunity to pursue non-value-maximising goals. Accordingly, Shivdasani (1993) and Weisbach (1992) contend that firms characterised by weaker corporate governance structures are more likely to be targeted by hostile bids. To analyze the hostile nature of private equity takeover bids, we investigated the corporate governance structures prevalent in private equity target firms. It is our contention that the corporate governance structures present in private equity targets perform a less effectual role than those present in conventional corporate takeover targets. Referring to Larcker et al. (2007), Chan and Emanuel (2011), and Shivdasani (1993), we identified three distinct categories of target firm corporate governance: board structure; ownership structure; and managerial power. Below, we construct hypotheses relating to each of these three categories of target firm corporate governance.

3.1. Board structure

The board of directors is considered to be the 'apex body' of an organisation's internal governance system, with responsibilities that include the monitoring of management, the setting of

compensation structures and the provision of key directions regarding investment and financing decisions (Fama and Jensen, 1983). It has also been viewed as the first-line of defence against an incumbent manager (Weisbach, 1992) and at least the second-best efficient solution for the shareholders in monitoring management (Hermalin and Weisbach, 2003).

Due to the typically diffuse ownership nature of today's listed corporation, John and Senbet (1998) contend that the firm's equity holders may lack the motivation and incentive to perform an appropriate or credible monitoring role over top management, as well as lacking sufficient ownership interest to justify the expenditure of resources necessary to monitor management closely. Here, the board of directors is presumed to fulfil the role of monitoring top management on behalf of the shareholders. Without it, the burden of monitoring management to ensure they are pursuing Manne's (1965) 'shareholder wealth maximization strategies', would rest solely with the firm's equity holders.

The effectiveness of a board's monitoring role can be determined by a number of board-related factors, including its size, independence, overall composition of insider/outsider directors and number of board/committee meetings (Larcker et al., 2007). Logically, a more effectual board structure should perform a more effectual monitoring role. While much debate surrounds the concept of an 'optimal' board structure, the empirical literature concurs that there are factors which depreciate the monitoring function ability of a company's board and hence weaken the board of directors as a corporate governance structure (Larcker et al., 2007). Such factors include, but are not limited to, a large board size, a large percentage of inside directors on the board, and fewer board or committee meetings. For instance, for Australian firms, Christensen et al. (2014) observed a positive association between independent directors and firm performance, while Christy et al. (2013) noted a negative association between the proportion of independent directors and firm risk.

A firm which is monitored by a less effectual board of directors is more likely to be characterised by a misalignment of interests between the management and owners. Shivdasani (1993) suggests that firms characterised by weaker corporate governance structures are more likely to be targeted by hostile bids. He argues that the probability of a disciplinary takeover bid is inversely related to a board's ability to monitor effectively. Further, Weir and Wright (2006) suggest that less effectual corporate governance structures, relating to a firm's board of directors, increase the likelihood that a firm is taken private. The preceding discussion forms the basis for our first hypothesis (stated in the alternate):

H₁: Firms targeted by private equity have less effectual board structures when compared with those of conventional corporate takeover targets.

3.2. Ownership structure

A second corporate governance mechanism that warrants investigation is the shareholder ownership structure. A firm's ownership structure refers to the specific composition and concentration of its equity holders. Concurrent with the market for corporate control and a firm's board of directors, ownership structure is a primary avenue through which shareholders can effectively exert control over top management. Individuals or institutions which possess large ownership stakes are motivated to monitor the actions of managers and hence, exercise greater control (Demsetz and Lehn, 1985). Accordingly, shareholder ownership composition, as an external corporate governance structure, has the potential to realign the interests of shareholders and managers through improved monitoring.

Grossman and Hart (1980) document the free-rider theory as a monitoring problem inherent in listed corporations with dispersed shareholder structures. The delegation of power from many to

just a few creates a fundamental problem in which only a selected number of individuals is sufficiently motivated to devote sufficient resources to ensure that representatives are acting in the interests of the represented. Since the representatives are serving a 'public good', the social benefit of monitoring is far greater than the private benefit to any one individual. As a result, individual shareholders owning smaller equity stakes may underinvest in monitoring activities, believing that 'someone else will do it' (Renneboog and Simons, 2005).

Bearle and Means (1932) and then Jensen and Meckling (1976) hypothesise that firm value is a function of a firm's ownership structure. Large external shareholders have an increased incentive to oversee managerial activities because their proportionately larger share holdings encourage them to monitor and, if need be, discipline top management (Demsetz and Lehn, 1985; Shleifer and Vishny, 1986). Firms with more diffuse ownership have a greater number of individual shareholders, each with smaller residual claims and, given the cost-benefit tradeoff, a diminished incentive to monitor management's actions (Grossman and Hart, 1980). As the number of substantial shareholders in a firm's ownership structure increases, the greater the collective individual wealth at stake and hence the more resources that are likely to be expended to monitor management.

We assert that agency costs are effectively mitigated by an increased concentration of a firm's ownership structure and so, by inference, a diffuse ownership composition represents a less effectual corporate governance structure. Weisbach (1992) and Shivdasani (1993) argue that firms characterised by weaker corporate governance structures are more likely to be disciplined via hostile takeover. Further, Maug (1998) suggests that the going-private transaction essentially constitutes a reunification of ownership and control. For instance, after a buy-out the post-transaction equity ownership resides in fewer hands. Investors will therefore have stronger incentives and more information to invest actively in monitoring management. Renneboog and Simons (2005) support this argument, contending that the main source of wealth gains from the going-private transaction results from a reduction in agency costs caused by diffuse ownership concentration. This leads to our second hypothesis (stated in the alternate):

H₂: Firms targeted by private equity have a less effectual ownership structure when compared with those of conventional corporate takeover targets.

3.3. Managerial power

The third dimension of a firm's corporate governance structure we investigated is the extent of insider shareholdings in the target firm, defined as the fraction of fully paid, ordinary shares that are, at the time of the bid, owned by top management executives and/or a firm's CEO. This focus encompasses the incentive component of corporate governance theory. In response to the agency problem, firms implement specific mechanisms which mitigate issues associated with the separation of ownership and control. One such mechanism is that of managerial ownership. By effectively 'pegging' the individual wealth of the managerial team to the value of a firm, it is hypothesised that management is motivated to pursue Manne's (1965) 'shareholder wealth maximization strategies'. The empirical literature outlines two complementary, incentive-based theories: Jensen and Meckling's (1976) convergence-of-interest hypothesis and Morck et al.'s (1988) management entrenchment hypothesis. Each of these attempts to explain how the level of executive ownership can influence firm performance and hence, firm value.

According to Jensen and Meckling (1976), the agency costs associated with a deviation from firm value-maximisation effectively decline as inside ownership increases. Here, top management find themselves responsible for a larger component of the agency costs and are therefore less likely to squander corporate wealth (Morck et al., 1988). Jensen and Meckling (1976) go on to argue that

as managerial shareholdings increase, the interests of the decision makers start to converge with those of the equity holders. This realignment of interests mitigates agency costs and thus Jensen and Meckling's (1976) convergence-of-interest hypothesis posits that the market value of a firm will increase as managerial ownership increases.

Using the convergence-of-interests hypothesis proposed by Jensen and Meckling (1976) as a starting point, a number of subsequent authors identified certain caveats that relate to the offsetting costs of significant managerial ownership (Fama and Jensen, 1983). For example, the extant literature suggests that even a manager with a relatively small ownership stake could still be coerced to pursue Manne's (1965) 'shareholder wealth maximisation strategies' via market discipline. Specifically, the literature shows that the market for corporate control (Jensen and Ruback, 1983), the product market (Hart, 1983) and the managerial labour market (Fama, 1980) can each effectively impede top management's attempts to deploy corporate assets in ways which do not benefit shareholders. Alternatively, Khan et al. (2014) provide some support for Jensen and Meckling's (1976) convergence-of-interest hypothesis, documenting a positive relation between managerial shareholdings and firm performance in a sample of large Australian firms, but only when managerial ownership exceeded 20%–30%. Interestingly, for levels of managerial ownership below this threshold, they documented a negative relation, suggesting a curvilinear relation between managerial ownership and firm performance overall.

In contrast, Morck et al. (1988) suggest that managers who control larger components of a firm's outstanding equity can compile enough voting power and general influence to entrench themselves in the firm. They propose a non-linear model in which excessive ownership by top management leads to entrenchment and, further, that such entrenchment may afford management the luxury of indulging in non-value maximising strategies that benefit themselves rather than the firm's owners. Thus the entrenchment hypothesis developed by Morck et al. (1988) predicts that the market value of the firm will decline as managerial ownership increases beyond a threshold value. Weston (1979) provides strong support for this argument, documenting that in his sample no firm where insiders collectively owned more than 30% of the outstanding equity had ever been acquired via hostile takeover.

Consistent with Morck et al. (1988), we contend that larger managerial ownership stakes are a less effectual corporate governance structure. Consistent with Shivdasani (1993), we posit that firms characterised by weaker corporate governance characteristics are more likely to be targeted and subsequently acquired via hostile takeover. Therefore, consistent with Morck's et al. (1988) managerial entrenchment hypothesis, we propose as our third hypothesis (stated in the alternate):

H₃: Firms targeted by private equity have greater managerial shareholdings, and hence less effectual managerial power, when compared with those of conventional takeover targets.

4. Econometric model and proxy selection

4.1. Econometric model

The focus of this study is on the role that the corporate governance structure of the target firm plays, if any, in private equity's selection of a target. This notion has been formalised in the preceding section through specific hypotheses relating to three fundamental dimensions of a firm's corporate governance structure. To test these hypotheses, we employ the following logistic regression model:

$$\text{PRIV}_j = \alpha + \sum \beta (\text{BoardStructure})_j + \sum \delta (\text{OwnStructure})_j + \sum \gamma (\text{MgrPower})_j + \sum \lambda (\text{CONTROL})_j + \varepsilon_j \quad (1)$$

In the context of this model, PRIV_j is a categorical variable set equal to one if the bidder for target firm j is designated as private equity and zero if the bid represents a conventional takeover bid. We follow Chapple et al. (2010) by defining a private equity bid as one where the bidder is either a private equity firm or the bidding consortium involves a private equity firm. The three corporate governance dimensions under consideration are board structure (*BoardStructure*), ownership structure (*OwnStructure*), and managerial power (*MgrPower*). Finally, with reference to the extant literature, we identify four measures for inclusion in the vector of control variables (*CONTROL*). These control variables are discussed immediately below; and the way that we measure each of the corporate governance dimensions is discussed thereafter in a dedicated section. The various measures are summarised in Table 1.

The four control variables are free cash flow, size, growth and profitability. We include a free cash flow control variable, given the arguments of Jensen (1986) and Lehn and Poulsen (1989), and the findings of Chapple et al. (2010). Jensen argues that firms going private are characterised by relatively higher free cash flows. Equally, Lehn and Poulsen (1989) suggest that because firms going private will have substantial free cash flow, the going-private transaction essentially returns the excess funds to shareholders since their highly leveraged nature means that management is effectively committed to pay out the funds to cover debt repayments rather than wasting them on unprofitable projects (Jensen, 1986). This forces a realignment of interests between the firm's owners and managers and therefore mitigates agency costs. Consistent with these arguments, Chapple et al. document a positive association between the likelihood of a private equity bid and the target firm's free cash flow. We measure free cash flow as the firm's free cash flow scaled by total assets (FCF/TA), where FCF represents the cash flow in excess of that required to all projects that have a positive net present value (Weir and Wright, 2006).

Following Weir et al. (2006) and Chapple et al. (2010) who both document a positive association between the likelihood of a private equity bidder and firm size, we also control for target firm size using the natural log of a target firm's total assets ($LnTA$). In addition, we use the market-to-book ratio (M/B) to control for target firm growth prospects. Here, Jensen (1986) and Lehn and Poulsen (1989) both argue that leveraged buyout candidates are typically characterised by lower growth profiles, a proposition that finds support in Shivdasani (1993) and Chapple et al. (2010). Finally, following Chapple et al. (2010), we control for target firm profitability, measuring profitability as the firm's return on equity (ROE).

4.2. Board structure measures

Consistent with the extant literature, to test H_1 we consider five board-related variables: board size measured as the total number of directors (*BOARDSIZE*); the fraction of each board comprised of inside directors (*BOARDINSIDE*); and the number of audit committee (*ACMEET*), compensation committee (*CCMEET*), and board meetings (*BOARDMEET*) held each year.

To begin, Yermack (1996) verifies Jensen's (1986) prediction of a negative correlation between firm value and board size. Here, two primary reasons promoted are the increased problems with communication and coordination as group size increases, and the decreased ability of the board to control management because of the 'free-riding' problem (Eisenberg et al., 1998). Based on the suggestion by Shivdasani (1993) and Weir et al. (2006) that firms characterised by less effectual

Table 1. Econometric model variable summary.

Theoretical construct	Variables	Definition	Expected sign
Private equity bidder	<i>PRIV</i>	A dichotomous variable set to '1' for private equity transactions and '0' otherwise, where the benchmark (<i>PRIV</i> = 0) sample is the 182 target firms matched by year and four-digit GICS code.	
Board structure:			
Board size	<i>BOARDSIZE</i>	A continuous variable which measures the number of directors serving on the target firm board	+
Board insiders	<i>BOARDINSIDE</i>	A continuous variable which measures the fraction of the target firm's board which is comprised of executive board members	+
Audit committee meetings	<i>ACMEET</i>	A continuous variable which measures the number of annual audit committee meetings held by the target firm board.	-
Compensation committee meetings	<i>CCMEET</i>	A continuous variable which measures the number of annual compensation committee meetings held by the target firm board	-
Board of director meetings	<i>BOARDMEET</i>	A continuous variable which measures the number of board meetings held by the target firm	-
Ownership structure:			
Shareholder ownership	<i>SHAREOWN</i>	A continuous variable which measures the fraction of outstanding shares held by the target firm's Top 20 Shareholders.	-
Blockholder ownership	<i>BLOCKOWN</i>	A continuous variable which measures the fraction of the outstanding target firm shares owned by blockholder.	-
Managerial power:			
Inside chair	<i>DUALITY</i>	A dichotomous variable set to 1 when the target firm's CEO also holds the position of chairperson of the board, and '0' otherwise.	+
CEO ownership	<i>CEOOWN</i>	A dichotomous variable set equal to 1 if the proportion of the target firm's outstanding shares held by the CEO or managing director exceeds the median level, and 0 otherwise.	+
CEO performance compensation mix	<i>COMPMIX</i>	A continuous variable which measures the fraction of total annual CEO compensation that is comprised of performance plans and annual bonus.	+
Control variables:			
Return on equity	<i>ROE</i>	A continuous variable measuring the target firm's return on equity.	-
Natural log of total assets	<i>LnTA</i>	A continuous variable measuring the natural log of the target firm's total assets.	+
Market-to-Book ratio	<i>M/B</i>	A continuous variable measuring the target firm's market value scaled by book value.	-
Free cash flows scaled by total assets	<i>FCF/TA</i>	A continuous variable measuring the target firm's free cash flows scaled by total assets.	+

corporate governance structures are more likely to attract hostile takeover bids, we expect private equity partnerships to target firms with larger boards.

Furthermore, it has been argued that independent directors are better monitors of managers because of the increased concern of such directors about their reputation in the directorship market (Fama and Jensen, 1983). The board is presumed to become less independent as the number of inside directors increases proportionately. A less independent board is more likely to be characterised by a misalignment of interests between the firms' owners and managers and thereby represents a weaker corporate governance structure. Accordingly, consistent with Shivdasani (1993), we contend that firms characterised by a larger proportion of inside directors are more likely to attract hostile bids and therefore, attract the attention of private equity partnerships.

The final set of measures captures board activity. Here, the empirical literature contends that the number of times board committees meet per year is positively related to the effectiveness of a board's monitoring function. Thus we expect that a smaller number of meetings reflects a weaker corporate governance structure and therefore there is a greater likelihood of attracting hostile takeover bids (Shivdasani, 1993). Because board committees meet separately from the full board and comprise subsets of the board members with specific knowledge on narrowly defined functions (Klein, 1998), we considered each of the number of audit committee, compensation committee, and full board meetings in the year prior to the takeover bid.

4.3. Shareholder ownership measures

To test hypothesis H_2 , we measured the ownership concentration of target firms in two comparable ways: the fraction of outstanding shares held by the firm's top 20 shareholders (*SHAREOWN*) and the fraction of outstanding shares held by the firm's blockholders (*BLOCKOWN*).⁹ These measures have been used in previous going-private research (Chapple et al., 2010), as well as in the broader corporate governance literature (Larcker et al., 2007). It is argued here that firms characterised by a more diffuse ownership structure inherently suffer a greater free-rider problem. As such, we interpret lower ownership concentration as indicative of a weaker external corporate governance structure and as a result more likely to attract hostile bids (Shivdasani, 1993; Weisbach, 1992). Thus we predict that private equity partnerships will be attracted to firms characterised by more diffuse ownership structures.

4.4. Managerial power measures

The final dimension of governance that we considered relates to the power of management – specifically, the firm's CEO. Here, we employ three alternative measures to investigate H_3 : an indicator variable which identifies firms which have a CEO who also acts as chairman of the board (*DUALITY*); an indicator variable that identifies high proportionate share ownership by the firm's CEO or Managing Director (*CEOOWN*); and the fraction of total annual CEO remuneration comprised of annual bonuses and performance plans (*COMPMIX*).

CEO duality (*DUALITY*) refers to the circumstance wherein the CEO simultaneously also serves as the chairman of the board of directors (Kini et al., 1995). We use this measure to gauge the CEO's power in relation to the board of directors, arguing that 'duality' weakens the board's monitoring role and compromises its independence. For this reason, CEO duality is often associated with weaker corporate governance (Christensen et al., 2014) and thus the firm more likely to attract a hostile bid (Shivdasani, 1993). We therefore argue that private equity is more likely to target firms where the CEO also serves as chairman of the board.

To measure the second indicator variable, *CEOOWN*, we calculated CEO ownership as the proportion of the firm's shares held by the CEO or Managing Director, and then set *CEOOWN* equal to one for firms with values above the median. Jensen and Meckling (1976) argued that as managerial ownership initially increases, the interests of the firm's decision makers begin to converge with the interests of the firm's equity holders. However, should insider shareholdings increase beyond a certain level, Morck et al. (1988) contend that the agency problem will once again arise. As discussed, they proposed a non-linear model in which excessive ownership above a threshold level leads to entrenchment of top management. We argue that excessively large managerial ownership stakes are indicative of a less effectual corporate governance structure and thus the firm is more likely to be targeted by hostile takeover bids (Shivdasani, 1993; Weir et al., 2006). Accordingly, we expect private equity target firms to be characterised by relatively higher levels of managerial/CEO shareholdings. Finally, we propose a relatively naïve measure of managerial power based upon the annual compensation mix of a firm's CEO (*COMPMIX*). We calculated *COMPMIX* as the fraction of total annual CEO compensation that comprises performance plans and annual bonuses.

5. Sample data and benchmarking procedure

5.1. Sample data

In order to conduct our experiment, we required both a sample of private equity bids and a control (benchmark) sample comprising corporate takeover bids. As noted at the outset, our focus is on the Australian experience; further, given the unprecedented levels of activity within the global private equity investment sector throughout the first decade of the 2000's, the study period we adopted was 1 January 2001 to 30 June 2010.¹⁰ Given this choice of experimental setting, we identified both samples from the Connect 4 'Takeovers' database. Because our focus was on target firm corporate governance attributes, we considered all bids irrespective of outcome (successful, current, withdrawn, or unsuccessful), as well as both schemes of arrangement (mergers) and acquisitions.

A search of the Connect 4 database revealed a preliminary sample of 882 takeover bids aimed at ASX listed firms and denominated in Australian dollars over the study period. Of these, 50 were private equity bids, defined as those in which the bidder was either a private equity firm or the bidding consortium involved a private equity firm (Chapple et al., 2010), and the remaining 832 were conventional corporate takeover bids. In this sample, seven of the private equity target firms and 93 of the corporate takeover target firms were the subject of multiple takeover bids. In order to ensure that these target firms were not over-represented, we retained only the first bid for each.¹¹ Finally, we sourced the accounting and governance measures required in the econometric model – equation (1) – from the AspectHuntley's FinAnalysis database. Because all the target firms were covered in the FinAnalysis database, the final samples consisted of 43 unique private equity bid target firms and 739 unique corporate takeover bid target firms.

Table 2 presents a frequency distribution for the sample bids by year (Panel A) and industry (two-digit GICS code) (Panel B). As revealed in the first column of Panel A and consistent with the reported figures in the RBAs' March 2007 Financial Stability Review, a majority of the sample private equity bids occurred during the window 2006 – 2008, with 8 bids in 2006, 11 bids in 2007 and 10 bids in 2008. In contrast, as revealed in the second column, the distribution for the number of corporate takeover bids is relatively more uniform over the study period, although there were slightly more bids over the period 2006–2009. The relative importance of private equity within the market for corporate control is confirmed in the third column of Panel A, which shows the number of private equity bids as a proportion of total bids by year. Here, the proportion ranges from 0% in 2002 (with no private equity bids) to 13.2% in 2008 (10 of the 76 bids were private equity bids).

Table 2. Frequency distribution by year and industry for samples of 43 private equity and 739 corporate takeover bids over the period 2001–2010.

Panel A: Frequency distribution by year.

Year	Private equity bids	Corporate takeover bids	Private equity proportion	Matched corporate takeover bids	Matched Private equity proportion
2001	1	73	0.014	12	0.083
2002	0	57	0.000	0	0.000
2003	3	73	0.039	18	0.167
2004	2	72	0.027	5	0.400
2005	2	59	0.033	18	0.111
2006	8	105	0.071	41	0.195
2007	11	103	0.096	35	0.314
2008	10	66	0.132	31	0.323
2009	4	100	0.038	20	0.200
2010	2	31	0.061	2	1.000
Total	43	739	0.055	182	0.236

Panel B: Frequency distribution by industry

GICS sector	GICS code	Private equity bids	Corporate takeover bids	Year and industry match
Energy	10	3 (0.070)	73 (0.099)	23 (0.126)
Materials	15	8 (0.186)	213 (0.288)	96 (0.527)
Industrials	20	5 (0.116)	74 (0.100)	9 (0.049)
Consumer discretionary	25	12 (0.279)	94 (0.127)	19 (0.104)
Consumer staples	30	1 (0.023)	47 (0.064)	0 (0.000)
Health care	35	2 (0.047)	47 (0.064)	5 (0.027)
Financials	40	6 (0.140)	117 (0.158)	14 (0.077)
Information technology	45	5 (0.116)	44 (0.060)	16 (0.088)
Telecommunication services	50	0 (0.000)	15 (0.020)	0 (0.000)
Utilities	55	1 (0.023)	15 (0.020)	0 (0.000)
Total	43 (1.000)		739 (1.000)	182 (1.000)

Private equity bids also played a much more important role in the market for corporate control in 2006 (7.1%) and 2007 (9.6%) relative to the other years within the study period.

The first column of Panel B reveals that all GICS sectors except telecommunications are represented in the private equity bid sample.¹² However, the majority of the private equity bids are for targets in three specific sectors: ‘consumer discretionary’ (27.9%), ‘materials’ (18.6%) and ‘financials’ (14.0%). In contrast, the second column reveals that the corporate takeover bids target firms somewhat more uniformly across all ten sectors, although the ‘materials’ sector is the most frequently represented (28.8%). Overall, while a comparison of the respective industry profiles reveals a number of differences, two perhaps worthy of note are the relatively lower attention paid

by private equity to firms in the ‘materials’ sector (18.6% versus 28.8%) and the relatively greater attention paid to firms in the ‘consumer discretionary’ sector (27.9% versus 12.7%). Here, as posited by Chapple et al. (2010), there are two possible reasons why private equity may shy away from the ‘materials’ sector and notably the ‘metals and mining group’: first, the often unpredictable outcomes of these ventures; and, second, their dependence on equity funding. Thus, the apparent private equity ‘overweighting’ of the ‘consumer discretionary’ sector may simply reflect an avoidance of targets in the ‘materials’ sector.

5.2. Benchmarking strategy

Importantly, irrespective of the underlying source, Table 2 clearly reveals that the distribution of the private equity bids differs in important ways across time and industry relative to the corporate takeover bids.¹³ Given these differences, it is unlikely that the sample of 739 corporate takeover target firms represents an appropriate benchmark sample against which to gauge the corporate governance attributes of the private equity bid target firms. As a final step we followed the approach adopted by Chapple et al. (2010) for developing a benchmark (control) sample against which to gauge the corporate governance attributes of the private equity bid target firms.

Specifically, we adopted a benchmarking strategy that pitches private equity target firm characteristics against corporate takeover target firm attributes, matched by year and four-digit GICS code. Since typically there is more than one eligible corporate match, to eliminate the possibility for selection bias we pooled the private equity and corporate takeover firms within industry and year, and then ranked each measure in ascending order. Finally, we normalised the measures by converting the ranks to percentile ranks to adjust for differing sample sizes within each industry-year group. Our analyses were then based on these percentile rank data.¹⁴

This benchmarking strategy resulted in an industry–year matched corporate takeover sample of 182 bids. The last two columns of Panel A of Table 2 show the distribution of these 182 matched bids and corresponding private equity proportions. Also, the last column of Panel B of Table 2 presents the industry distribution of matched bids. Here, while the distributions of the private equity bids across both year and industry more closely align with those of the industry-year matched benchmark sample than with those of the broader sample of corporate takeovers, the overlay is imperfect, given the differing number of corporate bids within each industry–year group.

5.3. Descriptive statistics

Table 3 presents target firm descriptive statistics from the reporting period most immediately preceding the takeover offer. The dimensions we considered were firm size (market capitalisation, total assets, and total revenue), profitability (ROA and ROE), free cash flow, growth (market-to-book) and efficiency (asset turnover). The first four dimensions represent the control variables included in our econometric model – equation (1) – given arguments and evidence that suggest likely differences along these dimensions between the private equity and corporate takeover bid target firms. The first set of columns reports the statistics based on the raw data; the second set reports statistics based on the percentile rank data. The figures presented are those for the private equity target firms, the matched corporate takeover target firms, and *p*-values for the differences in mean and median values. Given distributional properties, we emphasise median tests for the raw data.

As expected, the reported statistics suggest that the private equity target firms are indeed larger, more profitable, have higher free cash flow and are more efficient. Conversely, there is no evidence of a difference in terms of the market-to-book ratio. In greater detail, the raw median value and the

Table 3. Descriptive statistics for samples of private equity and matched corporate target firms.

Variables	Raw data			Percentile rank data		
	Private equity	Corporate match	p-value	Private equity	Corporate match	p-value
Market capitalisation						
Mean	AU\$1044.769	AU\$425.068	0.019	0.659	0.477	<0.001
Median	AU\$218.688	AU\$83.317	0.012	0.750	0.500	<0.001
SD	AU\$2774.083	AU\$1071.614		0.366	0.329	
Quartile 1	AU\$50.796	AU\$23.819		0.384	0.200	
Quartile 3	AU\$799.780	AU\$332.811		1.000	0.750	
Total assets						
Mean	AU\$1318.527	AU\$409.332	<0.001	0.639	0.479	<0.001
Median	AU\$270.852	AU\$67.840	<0.001	0.750	0.500	<0.001
SD	AU\$3309.063	AU\$1028.613		0.375	0.329	
Quartile 1	AU\$86.461	AU\$21.298		0.320	0.212	
Quartile 3	AU\$714.860	AU\$301.722		1.000	0.750	
Total revenue						
Mean	AU\$1584.559	AU\$241.008	<0.001	0.675	0.462	<0.001
Median	AU\$205.600	AU\$28.325	<0.001	0.857	0.466	<0.001
SD	AU\$5651.865	AU\$633.519		0.368	0.332	
Quartile 1	AU\$51.587	AU\$1.145		0.447	0.166	
Quartile 3	AU\$541.442	AU\$168.051		1.000	0.750	
Free cash flow						
Mean	AU\$89.575	AU\$13.706	0.018	0.608	0.488	0.040
Median	AU\$8.260	- AU\$1.368	0.015	0.705	0.500	0.035
SD	AU\$348.441	AU\$124.139		0.406	0.327	
Quartile 1	- AU\$6.345	- AU\$8.535		0.256	0.212	
Quartile 3	AU\$47.560	AU\$10.530		1.000	0.750	
Return on assets						
Mean	-0.251%	-0.128%	0.378	0.573	0.497	0.193
Median	0.049%	0.009%	0.046	0.625	0.500	0.193
SD	1.569%	0.504%		0.351	0.341	
Quartile 1	-0.009%	-0.126%		0.272	0.200	
Quartile 3	0.088%	0.071%		0.934	0.784	
Return on equity						
Mean	-0.070%	-0.106%	0.887	0.667	0.473	<0.001
Median	0.115%	0.007%	<0.001	0.700	0.472	<0.001
SD	1.551%	1.485%		0.330	0.336	
Quartile 1	0.034%	-0.174%		0.500	0.174	
Quartile 3	0.203%	0.134%		1.000	0.750	
Asset turnover						
Mean	1.204	0.677	<0.001	0.580	0.484	0.106
Median	0.711	0.409	0.011	0.625	0.500	0.095
Std. Dev.	1.501	0.846		0.394	0.336	
Quartile 1	0.301	0.018		0.208	0.202	
Quartile 3	1.525	1.019		1.000	0.750	
Market-to-book						
Mean	2.367	2.858	0.378	0.553	0.495	0.323
Median	2.000	1.920	0.715	0.565	0.500	0.327
SD	1.823	3.525		0.366	0.339	
Quartile 1	1.275	1.020		0.333	0.200	
Quartile 3	3.130	3.613		0.950	0.795	

The samples are 43 private equity bids and 182 corporate bids matched by year and industry. The measures presented are mean and median values for both the raw and percentile rank data, and two-tailed p-values for tests of differences. Percentile ranks were determined by pooling the private and matched corporate bids, ranking each measure within year and industry, and then converting the ranks to percentiles.

percentile mean and median values for all three size measures are significantly higher for the private equity sample at approximately the 1% level or better. For free cash flow, consistent with Chapple et al. (2010), mean and median values of both the raw and percentile rank measures are significantly higher for the private equity sample at the 5% level. Similarly, the raw median value and the percentile mean and median values of ROE are also significantly higher for the private equity sample, although only the median measure of ROA is statistically higher. While the percentile rank values are also numerically higher, the differences are not statistically significant. Furthermore, the raw mean and median asset turnover ratios are significantly higher for the private equity sample at approximately the 1% level, although the differences in percentile rank values are only weakly so. Finally, while the mean and median values of both the raw and percentile rank market-to-book ratios are higher for the private equity target firms, the differences are not statistically significant at conventional levels.

Overall the descriptive statistics are consistent with the notion that private equity is searching for larger, more profitable and more efficient Australian target firms which possess higher free cash flows. The findings on the size measures are consistent with the RBA contention that the recent increase in the overall value of Australian leveraged buyout activity is accounted for by a sharp rise in the average size of the going-private transaction, as opposed to a rise in the number of deals.¹ Interestingly, the finding for profitability is opposite that expected on the basis of Manne's (1965) inefficient management hypothesis which posits that hostile takeovers are a device for disciplining top management of poorly performing firms. It is, however, consistent with Chapple et al. (2010) who documented superior profitability for their sample of private equity targets.¹⁵

Finally, Table 4 presents a pair-wise correlation matrix for the measures contained in our econometric model, equation (1). The table presents bivariate Spearman (non-parametric) correlations below the diagonal and Pearson parametric correlations above the diagonal. As shown, the largest correlation is 0.523 within the Pearson matrix and 0.506 within the Spearman matrix, each between the number of audit committee and compensation committee meetings. As such, the likelihood is of a limited threat of multicollinearity (Gujarati, 1995).¹⁶

6. Empirical results

6.1. Univariate results

Table 5 presents mean and median values for the target firm governance measures we consider within this study. As above, the first set of columns report values based on the raw data and the second set of columns report values based on the percentile rank data. For each, the figures presented are those for the 43 private equity target firms, the 182 matched corporate takeover target firms, and *p*-values for the differences in mean and median values between the two samples. Given distributional properties, we focus our discussion on the values derived from the percentile rank data. In most instances, the raw data yield identical interpretations. In brief, the results of these univariate tests provide mixed support for H_1 , provide no support for H_2 , and modest support for H_3 .

Beginning with the board structure variables identified to test H_1 , as predicted we find that the boards of the private equity target firms are significantly larger (*BOARDSIZE*) at the 1% level based on both mean and median values. Equally, and also as predicted, while the proportion of executive board members (*BOARDINSIDE*) is higher for the private equity target firms, neither the difference in mean nor median values is significant at conventional levels. Finally, and contrary to predictions, the mean and median values for each of the three board activity measures, board meetings (*BOARDMEET*), audit committee meetings (*ACMEET*) and compensation committee

Table 4. Pairwise correlation matrices for the econometric model variables.

	PRV	BOARD INSIDE	BOARD SIZE	BOARD MEET	CC MEET	AC MEET	BOARD MEET	BLOCK OWN	SHARE OWN	CEO OWN	DUALITY	COMP MIX	M/B	ROE	LnTA	FCF/TA
PRV	0.068	0.211***	0.249***	0.243***	0.115	0.017	0.017	-0.003	0.124*	0.062	0.108	0.066	0.224***	0.183***	0.069	
BOARD INSIDE	0.067	-0.205***	-0.311***	-0.229***	-0.002	-0.016	-0.016	-0.023	0.274***	0.130*	-0.131*	-0.024	-0.232***	-0.168**	-0.146**	
BOARD SIZE	0.198***	-0.196***	0.459***	0.357***	0.178***	0.190***	0.190***	0.132**	-0.092	-0.098	0.141**	0.082	0.228***	0.493***	0.325***	
AC MEET	0.239***	-0.309***	0.446***	0.523***	0.446***	0.094	0.094	0.136***	-0.029	-0.140**	0.281***	0.061	0.288***	0.491***	0.249***	
CC MEET	0.227***	-0.232***	0.350***	0.506***	0.306***	0.073	0.073	0.047	0.005	-0.142**	0.330***	0.040	0.167**	0.459***	0.267***	
BOARD MEET	0.108	-0.001	0.168**	0.443***	0.286***	-0.019	-0.019	-0.006	0.012	-0.024	0.106	-0.066	0.075	0.154**	0.061	
BLOCK OWN	0.019	-0.012	0.189***	0.093	0.080	-0.016	-0.016	0.841***	-0.162**	0.013	0.100	0.046	0.090	0.216***	0.138**	
SHARE OWN	0.000	-0.019	0.133**	0.137**	0.060	-0.003	0.838***	-0.148**	-0.148**	-0.037	0.057	0.069	0.148**	0.162**	0.114*	
CEO OWN	0.121	0.273***	-0.094	-0.029	0.005	0.014	-0.165**	-0.152**	0.173***	0.175***	-0.024	0.004	-0.079	-0.140**	-0.048	
DUALITY	0.062	0.129*	-0.099	-0.141**	-0.134**	-0.031	0.014	-0.037	0.173***	-0.080	-0.076	-0.007	-0.143**	-0.045	-0.108	
COMP MIX	0.097	-0.137**	0.282***	0.324***	0.112*	0.088	0.088	0.049	-0.013	-0.010	0.142**	0.136**	0.169***	0.300***	0.052	
M/B	0.066	-0.028	0.080	0.062	-0.073	0.051	0.051	0.073	0.005	-0.046	0.169**	0.175***	0.177***	0.029	0.076	
ROE	0.228***	-0.228***	0.216***	0.277***	0.173***	0.073	0.085	0.144**	-0.079	-0.141**	0.169**	0.177***	0.311***	0.317***	0.419***	
LnTA	0.187***	-0.163**	0.488***	0.466***	0.154**	0.154**	0.217***	0.163**	-0.129*	-0.046	0.300***	0.033	0.311***	0.447***	0.447***	
FCF/TA	0.071	-0.138**	0.319***	0.248***	0.055	0.144**	0.144**	0.116*	-0.050	-0.107	0.063	0.072	0.417***	0.446***	0.447***	

Spearman's correlations are presented below the diagonal and Pearson's correlations are presented above the diagonal. The figures are based on a pooled sample of 43 private equity target firms and 182 corporate takeover target firms matched by industry and year. ***, **, * denote significance at the 1%, 5% and 10% level of significance.

Table 5. Governance measure descriptive statistics for samples of private equity and matched corporate target firms.

Variables		Raw data			Percentile rank data		
		Private equity	Corporate match	<i>p</i> -value	Private equity	Corporate match	<i>p</i> -value
Panel A: Board Structure Measures (H_1)							
BOARDSIZE	Mean	6.395	5.352	<0.001	0.640	0.451	<0.001
	Median	6.000	5.000	<0.001	0.833	0.500	<0.001
BOARDINSIDE	Mean	0.296	0.293	0.910	0.555	0.495	0.321
	Median	0.250	0.250	0.900	0.500	0.500	0.326
ACMEET	Mean	4.023	2.637	<0.001	0.635	0.402	<0.001
	Median	4.000	2.000	<0.001	0.667	0.367	<0.001
CCMEET	Mean	2.442	1.401	<0.001	0.559	0.317	<0.001
	Median	2.000	1.000	<0.001	0.667	0.183	<0.001
BOARDMEET	Mean	13.581	11.692	0.039	0.587	0.489	0.087
	Median	12.000	11.000	0.056	0.667	0.500	0.111
Panel B: Shareholder ownership composition measures (H_2)							
BLOCKOWN	Mean	0.465	0.476	0.753	0.521	0.505	0.795
	Median	0.494	0.459	0.999	0.538	0.500	0.782
SHAREOWN	Mean	0.699	0.702	0.910	0.510	0.507	0.958
	Median	0.748	0.701	0.888	0.500	0.500	0.929
Panel C: Managerial power measures (H_3)							
CEOOWN	Mean	0.042	0.037	0.694	0.576	0.464	0.064
	Median	0.005	0.005	0.340	0.667	0.470	0.071
DUALITY	Mean	0.093	0.055	0.355	0.093	0.055	0.355
	Median	0.000	0.000	0.699	0.000	0.000	0.699
COMPMIX	Mean	0.280	0.255	0.584	0.519	0.416	0.105
	Median	0.342	0.127	0.346	0.500	0.333	0.150

The samples are 43 private equity bids and 182 corporate bids matched by year and industry. The measures presented are mean and median values for both the raw and percentile rank data, and two-tailed *p*-values for tests of differences. Percentile ranks were determined by pooling the private and matched corporate bids, ranking each measure within year and industry, and then converting the ranks to percentiles.

All variables are defined in Table 1.

meetings (*CCMEET*) are all higher for the private equity target firm sample. Here, one possible interpretation is that target boards play more of a reactive role than a proactive role in monitoring managers, consistent with Vafeas' (1999) finding of a negative relation between board meeting frequency and firm value.

Turning to the ownership structure measures identified to test H_2 , the results reveal little difference between the extent of either block ownership (*BLOCKOWN*) or top 20 shareholdings (*SHAREOWN*). Tests for differences in mean and median values of these measures are insignificant at conventional levels. Overall, therefore, these tests suggest similar ownership structures for the samples of private equity target firms and matched corporate takeover target firms.

Finally, turning to the identified measures of managerial power (H_3), differences in mean and median values for all three measures are in the predicted direction, although only the difference in

the CEO ownership measure (*CEOOWN*) is statistically significant (at the 10% level).¹⁷ Neither the differences in mean or median values of *DUALITY* and *COMPMIX* are significant at conventional levels.

To summarise: our univariate results suggest that, relative to the benchmark industry-year matched sample, private equity target firms are characterised by larger boards, greater board activity, a higher level of inside ownership, and greater CEO ownership. Thus, on balance, relative to expectations, these results provide at best mixed support for the overarching argument that private equity targets firms with less effectual corporate governance structures. In the next section, we turn to the results from the multivariate analyses.

6.2. Multivariate results

Table 6 reports the findings for the logistic regression model – equation (1) – based on the percentile ranked data with White's (1980) and Huber's (1967) robust standard errors. Models (1), (2) and (3) individually introduce the alternative sets of governance measures, board structure (H_1), ownership composition (H_2), and managerial power (H_3), respectively, into the model. Model (4) then incorporates all three sets of governance measures. All models include the four control variables. For these control variables, the coefficient on *ROE* is consistently positive and significant at the 1% level, the coefficients on both *FCF/TA* and *M/B* are uniformly insignificant at conventional levels, and the coefficients on *lnTA* are weakly significant in two of the four models.

As revealed by the model χ^2 statistics and McFadden's R^2 s, all models have reasonable explanatory power, although Model (1), with only the board structure measures, appears to dominate Models (2) and (3) with only the shareholder ownership and managerial power measures, respectively. Further, the results are generally consistent with those from the univariate analyses. From a global perspective, as reported at the bottom of Table 6, the results for the Wald tests of joint significance reveal support for H_1 (board structure) and to a lesser extent H_3 (managerial power), but no support for H_2 (ownership composition). Given the consistent message arising from the various models, we restrict our discussions to the composite model, Model (4). Here, the χ^2 statistic for the joint significance of the five board structure measures is 18.024, significant at the 1% level, while the χ^2 statistic for the joint significance of the three managerial power measures is 4.402, significant at the 5% level. Alternatively, the χ^2 statistic for the joint significance of the two shareholder ownership composition measures at 0.794 is insignificant at conventional levels.

Turning to results for the individual measures, for H_1 we find the coefficients on *BOARDSIZE* and *BOARDINSIDE* to be positive as expected and significant. For Model (4), their coefficients are 0.995 and 1.656, respectively, the former significant at the 10% level and the latter at the 1% level. However, the coefficient on *BOARDMEET* while negative as predicted is insignificant. The coefficients on *ACMEET* and *CCMEET* are both positive in contrast with predictions and weakly significant. With regard to H_2 , consistent with the χ^2 -statistic for the test of joint significance, the coefficients on both *SHAREOWN* and *BLOCKOWN* are insignificant at conventional levels. Lastly, with regard to H_3 , the coefficients on all three measures are positive as predicted, although only the coefficients on *CEOOWN* and *DUALITY* are significant. Within Model (4), their coefficients are 0.992 and 1.541, both significant at the 5% level. Alternatively, the coefficient on *COMPMIX* at 0.106 is insignificant at conventional levels.

To summarise: the results appear to support the assertions that private equity partnerships seek target firms with less effectual board structures (H_1) and managerial power (H_3), consistent with

Table 6. Logistic regression model results relating probability of a private equity bid to target firm governance structure measures.

Variable	Sign	Model (1)	Model (2)	Model (3)	Model (4)
BOARDSIZE	+	0.849* (0.094)			0.995* (0.072)
BOARDINSIDE	+	1.722*** (0.004)			1.656*** (0.009)
ACMEET	-	1.210* (0.090)			1.379* (0.072)
CCMEET	-	1.252** (0.026)			1.314* (0.060)
BOARDMEET	-	-0.441 (0.494)			-0.458 (0.484)
SHAREOWN	-		-0.629 (-0.514)		-0.570 (0.351)
BLOCKOWN	-		0.351 (0.726)		0.118 (0.845)
CEOOWN	+			1.130** (0.031)	0.992** (0.040)
DUALITY	+			0.835** (0.021)	1.541** (0.036)
COMPPIX	+			0.256 (0.608)	0.106 (0.854)
ROE		1.799*** (0.007)	1.660*** (0.009)	1.789*** (0.006)	2.141*** (0.002)
FCF/TA		-0.362 (0.544)	-0.346 (0.562)	-0.339 (0.567)	-0.400 (0.514)
LnTA		-0.288 (0.673)	1.060* (0.062)	1.134* (0.057)	-0.315 (0.665)
M/B		0.039 (0.947)	0.198 (0.707)	0.085 (0.876)	0.115 (0.850)
intercept		-4.385*** (<0.001)	-2.766*** (<0.001)	-3.728*** (<0.001)	-4.753*** (<0.001)
Chi-square (χ^2)		34.778***	16.008***	22.738***	41.339***
Nagelkerke R^2		0.230	0.110	0.154	0.269
Wald test (F -statistic) for joint significance of BoardStructure, χ^2 (5)		21.495***		18.024***	
Ownership Structure, χ^2 (2)		1.092		0.794	
Managerial Power, χ^2 (3)			8.807**	4.402**	

The samples are 43 private equity bids and 182 corporate bids matched by year and industry. All variables are defined in Table 1. The analyses are based on equation (1) using percentile rank measures, determined by pooling the private and matched corporate bids, ranking each measure within year and industry, and then converting the ranks to percentiles. ***, **, *significant at the 1%, 5%, and 10% levels, respectively; two-tailed p -values presented in parentheses.

the disciplinary nature of private equity takeovers. Alternatively, there appears to be no support for the assertion that they seek target firms with less effectual ownership structures.

6.3. Additional considerations

First, we will address concerns regarding attenuation bias, in which the use of multiple proxies to measure one construct within a single regression model may bias the coefficient estimates towards zero (Lubotsky and Wittenberg, 2006). Second, as documented in Table 2, the distribution of sample private equity bids is not uniform across the study period. To provide some assurance that our results are not sensitive to the choice of study period, we partitioned our data into the two sub-periods, 2001–2007 and 2008–2010, and then repeated our regression analysis. As indicated in the discussion below, we found our results and conclusions to be unaffected by these two additional considerations.

In greater detail, regarding attenuation bias, the pair-wise correlations reported in Table 4 suggest that it could be a material concern for the two ownership composition measures (the Pearson correlation between *SHAREOWN* and *BLOCKOWN* is 0.841) and a possible concern for the five board structure measures (three of the correlations exceed 0.4), but is unlikely to be a concern for the managerial power measures (none of the correlations exceed 0.2). As such, we undertook factor analysis to construct composite measures for each of the governance categories and the re-run equation (1) based on the rank measures of these underlying factor scores. Here, principal components analysis (PCA) revealed one common factor for each of the ownership composition and managerial power categories, respectively, but three factors underlying the board structure measures, with *BOARDSIZE* and *BOARDINSIDE* identified as unique factors and a common factor capturing the board activity measures (*ACMEET*, *CCMEET*, and *BOARDMEET*).

The results (not tabulated) uniformly support the conclusions based on the primary analyses reported in Table 6. For the composite model which includes all governance factors and the control variables, the coefficients on *BOARDSIZE* (1.373, $p = 0.059$) and *BOARDINSIDE* (1.204, $p = 0.045$) remain positive and significant, while the coefficient on the board activity factor measure is insignificant at conventional levels (-0.301 , $p = 0.213$). Further, the coefficient on the ownership composition factor measure remains insignificant (-0.088 , $p = 0.625$). Finally, the coefficient on the managerial power factor is positive as expected and remains weakly significant at the 10% level (0.264, $p = 0.070$). Thus, results based on the ranked factor scores suggest that concerns regarding ‘attenuation bias’ are not driving either our results or conclusions.

Second, results (not tabulated) for equation (1) run separately on the two sub-periods, 2001–2007 and 2008–2010, are, with two exceptions, consistent with those based on the complete study period reported in Table 6. Of initial note, the coefficient estimates for both sub-periods are of similar magnitude across all variables (governance and control). Further, in terms of significance, for the board structure measures, the coefficient on *BOARDINSIDE* remains positive and significant in both sub-periods, the coefficient on *BOARDMEET* remains negative as predicted and insignificant, and the coefficients on *ACMEET* and *CCMEET* remain positive in contrast with predictions. For the ownership composition measures, all coefficient estimates are again insignificant at conventional levels. Finally, for the managerial power measures, the coefficient on *DUALITY* remains positive and significant and the coefficient on *COMPMIX* insignificant. The only exceptions relate to the coefficients on *BOARDSIZE* and *CEOOWN* which, although having the same sign, are found to be insignificant in the later time period. Here, however, a potential mitigating factor might be the fact that while the pooled analysis was conducted on the basis of a sample of 43 private equity bids and 182 corporate bids, and the 2001–2007 analysis on a sample of 27 private equity and 129 corporate bids, the analysis for the sub-period 2008–2010 was based on a much smaller sample of only 16 private equity bids and 53 corporate bids. Thus, overall, our results and conclusions do not appear to be sensitive to the choice of study period.¹⁸

7. Summary and conclusion

This study investigated whether firms targeted by private equity partnerships have less effectual corporate governance structures when compared with those of conventional corporate targets. Hitherto, no formal research had been conducted seeking to describe the relationship between Australian private equity transactions and target firm corporate governance structures. Thus, the innovation of this study lies in the unexplored relationship between the disciplinary theory of takeovers and the Australian private equity investment sector. By investigating this relationship, this study provides insights into the determinants of private equity target firms, fills a gap in the empirical mergers and acquisition literature and presents market commentators with a more informative understanding of the Australian private equity investment sector.

We tested our expectations using a sample of 43 publicly listed private equity target firms and a benchmark control sample of 182 conventional corporate targets, matched by year and industry, for the period 2001–2010. Preliminary descriptive statistics indicate that, relative to other corporate targets, target firms that attract private equity attention are typically larger, more profitable, more efficient in terms of asset turnover and possess a comparatively greater amount of free cash flow.

Our univariate analysis indicates that, relative to our benchmark sample of corporate takeover targets, private equity targets have larger boards and a greater number of audit committee, compensation committee and board meetings. Further, they are characterised by a higher level of insider ownership. The multivariate analysis indicates that private equity targets are more likely to have boards which perform a less effectual monitoring role and top management and which is more likely to be entrenched in the firm. In particular, we find that both the size of the board and the number of board insiders are positively related to likelihood of a private equity takeover bid. Further, we find a positive relationship between CEO shareholdings and the probability of a private equity takeover offer.

Considering the significance, materiality and interest in the Australian private equity investment sector, the results of this study can be of value to practitioners, professionals, regulators and academia in terms of providing an improved understanding of the determinants of Australian private equity takeover bids.

Equally, given its exploratory nature and the uniqueness of its hand collected data set, we acknowledge a number of caveats. As the growth in the Australian private equity investment sector is a somewhat recent phenomenon, our sample of Australian private equity targets is relatively limited. Further, due to the industry–year matched nature of our corporate benchmark sample, our total sample is ultimately limited by the number of private equity target firms. Although the addition of further private equity targets to our sample would be advantageous, in the sense that they would enhance the credibility and validity of this study by further mitigating the potential for biased results, we are confident that our narrowly defined interpretation of the term private equity renders our sample representative of the Australian going-private universe. A second limitation of this study relates to the data collection process and the tedious task of hand collecting corporate governance variables from the last available, pre-bid annual reports. This collection procedure ultimately constrained the breadth of our analysis of the Australian private equity investment sector. However, despite such a constraint, it is our contention that the important encompassing and reliable governance indicators were collected and employed within this analysis.

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Notes

1. Reserve Bank of Australia, *Financial Stability Review*, March 2007, viewed 15 May 2010. <http://www.rba.gov.au/publications/fsr/2007/mar/html/private-equity-aus.html>
2. MacArthur, Varma and Henderson, *Australian Financial Review*, For brave firms, this may be a vintage year, viewed 18 October 2010. http://www.afr.com/p/markets/dealbook/for_brave_firms_this_may_be_vintage_iKrheLSsMtbQcaueJdds4J?hlml
3. Morrissey, J., October 15 2010, Private Equity Deals: Poised for a Comeback, *Time*, viewed 15 October 2010. <http://www.time.com/time/business/article/0,8599,2025884,00.html>
4. In the current study, our interest is in the question of whether private equity targets firms with less effectual governance structures (inclusive of board structures) than those firms targeted in conventional corporate takeovers. Fundamental to this question, and relevant not only to private equity takeover target firms but to the broader universe of firms, is the question of why some firms exhibit or choose less effectual governance (board) structures than to others. Clearly, such a decision is likely to be relatively complex, incorporating the interplay of factors captured under the various governance dimensions (internal versus external governance), in addition to other firm characteristics and external factors. Given its inherent interest and broader applicability, we leave this question for future research.
5. OECD: The Private Equity Boom: Causes and Policy Issues, viewed 2 July 2010. <http://www.oecd/dataoecd/36/59/40973739.pdf>
6. Reserve Bank of Australia, *Financial Stability Review*, March 2007, viewed 15 May 2010. <http://www.rba.gov.au/publications/fsr/2007/mar/html/private-equity-aus.html>
7. AVCAL, Private equity in Australia, Submission to Senate Standing Committee on Economics, May 2007, viewed 24 June. http://www.avcal.com.au/sites/default/files/uploads/news/AVCAL_Submission_toSenate_FINAL_Edited_0.pdf
8. ACSI, Public companies being taken private: a research report into private equity, Melbourne Centre of Financial Studies, August 2009, viewed August 2010. <http://www.melbournecentre.com.au/files/Private%20Equity%20Research%202009%20FINAL.pdf>
9. A blockholder is defined as a shareholder holding five per cent or above of the company's shares. This definition is commonly used in Australia given a substantial holding is defined as five per cent or more of the total number of votes attached to voting shares in the body, and under section 671B of the Corporations Act a person with a substantial holding must disclose the information to the company.
10. This period encapsulates the majority of Australian private equity activity since inception in 1987 (CHAMP Private Equity, Pioneering History, viewed 15 May 2010. <http://www.champequity.com.au/pioneering-history>).
11. Sensitivity analyses confirm that results and conclusion are not sensitive to the inclusion or exclusion of these multiple observations. In several instances, firms were the target of both a corporate takeover bid and a private equity bid. For example, on 19 October 2005, Citicorp Corporation Ltd (CTL) attracted an ultimately unsuccessful corporate takeover bid; subsequently, on 6 January 2006, it became the subject of a private equity bid. Here also, results are robust to the inclusion or exclusion of these observations.
12. The absence of private equity activity in the telecommunications sector appears to reflect a norm in the Australian takeover market, a notion supported by the fact that only 2% of the corporate takeover bid sample involved a telecommunications target.
13. These differences are similar to those observed by Chapple et al. (2010) for their sample of Australian bids from 2001–2007.
14. The percentile ranks within each industry–year group are calculated as: $\text{percentile rank} = (\text{rank} - 1) / (\# \text{firms} - 1)$.
15. Agrawal and Walkling (1994) find no evidence of pre-acquisition underperformance for takeovers where disciplining the managers is the likely motive and thereby conclude that hostile bids are not necessarily directed at poorly performing firms.

16. Untabulated variance inflation factors (VIF) support the view that multicollinearity is not a threat.
17. One possible alternative explanation for these results is that higher levels of CEO shareholdings are a direct result of the small, 'start-up' nature of private equity target firms. However, the summary statistics reported in Table 3 which suggest that private equity target firms are larger indicate that this explanation is unlikely. In fact, our sample of private equity takeover targets encompasses some of Australia's largest companies by market capitalisation, including Coles Group Ltd and Qantas Airways Ltd.
18. Results are available upon request. Similar conclusions pertain when the study period is alternatively partitioned into the sub-periods 2001–2006 and 2007–2010, and also when the period of greatest activity, 2007–2008, is considered separately relative to the remaining eight years in the study period.

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Appendix I.

Hallmarks of the Australian private equity investment sector

The hallmarks of the Australian private equity investment sector, as outlined by a number of market commentators, are presented below. The Australian Private Equity and Venture Capital Association Limited (AVCAL) is the central voice of the Australian private equity investment sector and represents almost all of the domestic, regional and global private equity firms active in Australia. In a 2007 Senate submission to the standing committee on economics, they detailed a number of mechanisms which were thought to add value to portfolio businesses, as follows.

The Reserve Bank of Australia (RBA) is Australia's central bank and a primary financial regulator: in a 2007 Financial Stability Review it examined the pivotal characteristics of the Australian private equity investment sector

Austin and Tuch (2008) investigated the key attributes of the private equity asset class, from an academic viewpoint, in their report 'Private equity and corporate control transactions', developed for the Ross Parsons Centre of Commercial Corporate and Taxation Law.

Finally, the Australian Council of Super Investors Inc (ASCI), which assists its member funds with the management of investment risk, commissioned a report to examine the central hallmarks of the Australian private equity investment sector.

Market Commentator	Hallmarks of Australian private equity
AVCAL	Alignment of interests between owners and managers of the firm; Long-term focus not compromised by short-termism; Detailed due diligence; Development of a comprehensive and coherent long-term plan for growth; and Active stewardship.
RBA	Decisions are made in the long-term interests of the firm; Reduced governance burdens; and Better alignment of interests between owners and managers of the firm.
Austin and Tuch (2008)	Targeting of poorly managed businesses; High level of debt funded by third party lenders; High gearing post-acquisition; Median- to long-term investment strategy; Control of the acquired business;
ASCI	Injection of management disciplines to achieve aggressive business plans. Increased tax shields arising from high debt levels; Disciplining effect of debt (or face higher likelihood of bankruptcy); Increased monitoring by lenders reduces agency costs; and Improved management incentives and performance.