

The Relation Between Private Equity Takeovers and Takeover Premiums

1. INTRODUCTION

The relation between acquisitions and takeover premiums has been extensively documented in the academic literature (Jensen and Ruback, 1983; Kaplan, 1989; Grossman and Hart, 1980; Jensen, 1988; DeAngelo, DeAngelo and Rice, 1984; Marias, Schipper and Smith, 1989; Manne, 1965; Burkart, 1995; Nathan and O'Keefe, 1989). These studies have focused on settings whereby the takeover or merger is initiated by a market place competitor. Such transactions focus on particular synergies that accrue to the acquiring party, and include a control premium to reflect the benefits gained through the extraction of these synergies. They also have focused on specific organisational attributes or operational deficiencies that could initiate takeover activity. However, studies have not extensively focused on Private Equity takeovers, a unique phenomenon that institutional markets are experiencing for a second time after the private equity wave in the 1980's. Private Equity Takeovers provide a new setting to understand the composition and structure of takeover premiums.

The objective of this study is to provide evidence on the takeover premium offered by private equity in terms of the costs of corporate governance and costs of internal compliance, the role of leverage to increase returns and reduce free cash flow wastage, as well as changes in the senior management team of the target firm.

There are two key motivations for this study. First, this research is motivated by the rapid increase in private equity transactions in global markets. Such private equity transactions have globally totalled more than \$US 715 billion in the 2006 year¹, as the macroeconomic environment provided a favourable investment arena with low interest rates and excess liquidity. However, there is limited empirical evidence to explain the distinct characteristics of this current wave of private equity transactions.

The second motivation of this study is that private equity offers a unique setting within which to study the association between takeover premiums and agency costs. The extant academic literature has predominately focused on takeover premiums and their magnitude through varying organisational and structural efficiencies. For example, Modigliani & Miller (1958) showed that benefits may be gained by organisations using leverage to increase returns; Jensen and Ruback (1983) focuses on the market for corporate control.

However, the academic literature has not extensively focused on agency costs seen through corporate governance and internal compliance systems as significant factors which can impact the magnitude of takeover premiums². Much anecdotal evidence suggests that such costs have increased, as the enactment of the Sarbanes – Oxley Act in the U.S. has resulted in the exogenous application of corporate governance structures on all publicly listed companies. This study provides empirical research as to the nature of agency cost increases as seen through increases in takeover premiums and supports investor and managerial concern about the impact of over regulation on the operational activities of organisations.

This study provides empirical evidence on the association between costs of internal compliance and corporate governance and the magnitude of takeover premiums for a sample of 110 private equity takeover transactions in the period 2003 – 2007. The key results from this study suggest that internal compliance costs and corporate governance are both reflected in the magnitude of takeover premiums. In particular, it is found within the different models that a positive relation existed between corporate governance as seen through excessive executive compensation and takeover premiums and furthermore, a positive relation exists between increases in Sales, General and Administration expenses and the magnitude of takeover premiums. This supports the hypotheses that the implementation of SOX has contributed significant net costs to the operations of corporations. The findings from the sensitivity tests confirm these results.

¹ “Private-Equity Players Hone Their M&A Game”, *The Wall Street Journal*, Marietta Cauchi, 4 January 2007

² Jensen (1984) and DeAngelo, DeAngelo and Rice (1982) identify the gains from going from a public to a private company.

The contribution of this study is that we provide some evidence on how the motivation and scope of private equity transactions have differed in the last decade. First, the results indicate that there is a positive association between takeover premiums and costs associated with corporate governance and internal compliance. Second, the study also finds weak support for the association between excessive executive remuneration and the magnitude of takeover premiums.

The remainder of the study is as follows. Section 2 details the theory development; Section 3 describes the data used in the study and outlines the research design. Section 4 reports the results of the study and the conclusion is contained in Section 5.

2. THEORY DEVELOPMENT

This study utilises a traditional agency viewpoint of the firm, whereby an incomplete alignment of the agent's and owners interests lead to the conception of agency costs (Jensen and Meckling, 1976; Fama and Jensen, 1983). As differing contracting parties have conflicting interests, agency costs arise through the structuring, monitoring and bonding of these contracts, notwithstanding the residual losses that also evolve as complete contracting is uneconomical (Fama and Jensen, 1983; Grossman and Hart, 1986; Hart and Moore, 1990). Agency costs can be viewed within separate frameworks, with both costs of corporate governance and internal compliance costs arising from this separation of duties. Agency costs arise through corporate governance as outside stakeholders require monitoring to ensure a return on their investment (Shleifer & Vishny, 1997). The magnitude of these costs is limited by how well outside intervention and governance mechanisms scrutinise the actions of management and the operations of the firm (Ang, Cole and Lin, 2000). Additionally, agency costs can be reflected in the private control benefits management receive, or through the entrenchment of management even if they are no longer qualified to run the company (Shleifer and Vishny, 1989). The role of acquisitions as a corporate governance mechanism is also of importance. Scharfstein (1988), Morck, Shleifer and Vishny (1988) and Martin and McConnell (1991) viewed takeovers as a disciplinary mechanism which reduced self interested behaviour that could potentially lower firm value. Manne (1965) viewed the role of acquisitions as both a value-enhancing activity and disciplinary mechanism, with value being extracted through numerous sources including cost savings and additionally through the replacement of inefficient management.

Internal compliance costs arise as the monitoring function is also played out through the supervision of management, and the investing and financing decisions they pursue (Jensen, 1983). Internal control systems are one such manifestation through which monitoring occurs, and agency costs arise. Fama and Jensen (1983) found that such systems are instrumental in separating the management and control of important decisions at all levels of the organisation. The separation of such decisions is reflected in decision hierarchies and incentive structures, with oversight provided by the board of directors (Fama and Jensen, 1983). However, the transfer of such decision rights among the differing levels of an organisation leads to control costs as systems to measure and evaluate performance are not costless (Christie et al, 2003; Kaplan and Atkinson, 1998). Additionally, Jensen and Meckling (1992) show that knowledge transfer costs exist as the effective communication among these differing levels is impacted through a variety of factors. Such costs associated with control mechanisms are borne by corporations for the perceived benefits of widely held share ownership.

However, it has been suggested that in part, the breakdown of the internal control systems led to corporate failures such as Enron and WorldCom³. To restore credibility within these markets to investors, the U.S. Congress passed the Sarbanes-Oxley Act (2002), with the specific aim of reigning in past excesses and financial manipulation. Additionally, this regulation was to provide confidence to investors and induce them to return to the financial markets. This confidence was to come from the consistent application of these regulations to all publicly listed companies. As the exogenous application of these regulations was enforced, anecdotal evidence suggests that agency costs, especially those surrounding corporate governance and internal compliance, were increasing.

³ "Companies complain about cost of corporate governance rules", *Wall Street Journal*, Deborah Solomon, Cassell Bryan-Low, February 10, 2004

Private Equity takeovers offered viable alternatives that escaped regulatory intervention and consequently, reduced agency costs. With increasing levels of transactions, private equity firms were seeking alternative ways of obtaining value from their investments. Additional benefits that such firms received were reflected in value enhancements extracted through the removal or reduction in agency costs, especially internal compliance costs. This provided Private Equity firms with the unique position of maximising value through specific agency cost reductions, an opportunity not available in acquisitions made by listed company bidders. However the translation of these expected value benefits into takeover premiums increases has not previously been documented in the extant academic literature⁴.

2.1 TAKEOVER PREMIUMS AND COSTS OF CORPORATE GOVERNANCE

Corporate governance is revealed through many functions, including the board of directors, auditors and large institutional stockholders and creditors (Gillian, 2006). Jensen (1993) described the board of directors as holding the responsibility to advise and monitor management and also the responsibility to hire fire and compensate the senior management team. The auditing function is an external system which also provides an efficient monitoring process to ensure the viability of the contracting mechanisms of the firm (Watts and Zimmerman, 1986). Large stock holders and creditors also play an active role in corporate governance, with shareholders receiving voting control to place pressure on management (Shleifer and Vishny, 1986) and creditors receiving control rights should firms default or violate debt covenants (Smith and Warner, 1979). These functions each operate independently but are extricable linked in protecting the rights of investors from misappropriation or managerial opportunism.

Previous studies outlined including Yermack (1996), have applied corporate governance as an exogenous scheme of rules that can be applied across all firms. Although corporate governance is now viewed as a package of mechanisms uniquely applied by each organisation, the implementation of SOX has enforced governance structures through a “one size fits all” system. Thus, outside intervention on the governance structure of an organisation may have a considerable impact on the costs associated with corporate governance and the overall agency costs associated with widely held ownership.

It is these monitoring and bonding costs that are reviewed upon the takeover by a private equity firm. The incentives of management who are also the owners of the organisation will realign the objectives of the firm, as costs of corporate governance are now borne by the private equity owners where previously they were held by a widely held but predominately disinterested shareholder base. This is supported by Lehn and Poulsen (1989) who find that private equity takeovers concentrate residual claims among management or outside monitors, as they also bear the consequences of organisational decisions.

The board of directors, as the apex of a firm’s internal monitoring mechanisms will bear the brunt of post takeover changes as private equity firms unwind SOX imposed guidelines. In line with research by Kini et al (1995), it is expected that takeovers will result in reduced costs of corporate governance, as the disciplinary mechanisms of the takeover result not only in changes in senior management but also in the composition and structure of the monitoring function of the board of directors. Furthermore, such changes to the board of directors also include a downsizing in their number, corresponding to research by Yermack (1996) that found that smaller boards are more effective and lead to higher firm valuations. It is expected that such a rebalance will provide for stronger corporate governance, while reducing costs associated with ineffectual monitoring mechanisms. The role of large shareholder’s or the takeover market to discipline senior management and the board of directors is seen as fundamentally important mechanisms to initiate change and reduce agency costs.

Furthermore, the role of executive compensation is examined within private equity takeovers due to the realignment of incentives that such a buyout provides between management and stakeholders. The prior agency literature has focused on the role of executive compensation contracts as a bonding or alignment of managerial interests to that of stakeholders (Ortiz-Molina, 2007; Arora and Alam, 2005;

⁴ Although studies by Jensen (1986) and Lehn & Poulsen (1989) have focused on the agency costs of free cash flows, savings from such an acquisition can be made by both private equity firms and other listed organisations. This study is focusing on cost savings that private organisations can extract through removing corporations from the public domain.

John and John, 1993; Brander and Poitevin, 1992; Jensen and Murphy, 1990; Jensen and Meckling, 1976). Additional research has focused on the differing application of executive compensation contracts that should reflect the unique capital structure of the firm, and the diverse agency costs associated with the presence of both shareholders and debt holders (John and John, 1993; Ortiz-Molina, 2007).

However, recent evidence suggests that incentive changes to compensation structures have only added to the increase in magnitude of compensation packages, somewhat reducing the incentive capacity of these contracts (Arora and Alam, 2005). Further, Agrawal and Walkling (1994) showed that industries where chief executive officers earned significant abnormal compensation packages experienced a greater frequency of takeover bids. The magnitude of these compensation contracts that compromise both incentive and non incentive payments, are aspects of an organisations governance and incentive structure which can be reduced upon the completion of a private equity takeover. As managers in private equity takeovers often hold significant equity stakes (Jensen, 1986), there will be an increase in alignment of managerial objectives to that of stakeholders, reducing costs associated with corporate governance.

It is these additional costs of corporate governance that would be expected to be eliminated in a private equity takeover, as the convergence of ownership in management aligns their incentives to the firm and reduces the monitoring and bonding costs associated with dispersed ownership. The value of the elimination of these additional costs of corporate governance should be reflected in increases in the takeover premium by the private equity firm.

Consequently, it is predicted that:

H_1 : *A positive relation exists between costs of corporate governance and takeover premiums.*

2.2 TAKEOVER PREMIUMS AND INTERNAL COMPLIANCE COSTS

Agency costs associated with internal compliance reflect the design, implementation and maintenance of incentive and control systems within the firm (Jensen and Meckling, 1976). The implementation of internal control systems reflect the decentralisation of firms, and the associated costs of transferring knowledge as decision rights are delegated. Throughout the delegation process, management partition the decision rights within an organisation among different agents so as to maximise the aggregate value of the organisation. However, the delegation and transfer of decision rights leads to asymmetric information and a possible divergence in incentives among the differing agents within the organisation. (Harris, Kriebel and Raviv, 1982). Thus, a trade off exists between the delegation of decision rights to lower level managers to exploit their informational advantage and the restrictions on these agents to reduce self interested behaviour (Harris et al. 1982, Page 605). Costly internal systems are required to measure and evaluate the performance of management and agents who receive such rights (Christie et al, 2003). These internal systems incorporate both the incentive and control systems utilised in an organisational structure that together contribute to costs of internal compliance.

The importance of internal control systems is reflected in recent regulatory changes within the U.S. The implementation of SOX as an exogenous application of rules on publicly listed companies has been directly associated with increases in internal compliance costs. These costs reflect changes to an organisations internal control systems, with anecdotal evidence suggesting compliance with Section 301, 302 and 404 requirements as an overwhelming burden for complying firms⁵. Other associated tangible costs include changes to financial reporting systems, documentation procedures, staff training and the implementation of regulatory compliant processes and internal controls⁶. These costs of compliance associated with SOX have also been reflected in the reaction by financial markets to its enactment. Zhang (2007) in her event based study on significant market announcements preceding the implementation of SOX, found that firms experienced negative price reactions around notable events. The results suggested that SOX imposed statistically significant net costs on complying firms.

The benefits of the private equity structure are observed as their status as essentially a private organisation assists in the avoidance of the onerous rules and the associated costs imposed on publicly

⁵ "Regulation, Yes; Strangulation, No", *Wall Street Journal*, Maurice R. Greenberg, 21 August 2006

⁶ "What is Sarbanes – Oxley", *McGraw Hill*, Guy Lander, 2003

listed corporations. Such an organisational structure allows them to circumnavigate the more stringent SOX requirements of Section 301, 302 and 404, which are a considerable factor in increasing costs of compliance for publicly listed corporations. It is expected that these compliance costs will be eliminated or reduced upon the takeover by a private equity firm due to privatised corporations escaping the clutches of this regulation.

Consequently, it is predicted that:

H₂ : A positive relation exists between internal compliance costs and takeover premiums.

2.3 TAKEOVER PREMIUMS AND CHANGES IN SENIOR MANAGEMENT

The market for corporate control is an instrumental process that determines managerial control over the organisation. This competition from alternate management teams serves as control mechanism for disciplining incumbent management (Fama, 1980; Manne, 1965; Morck, Shleifer and Vishny 1988). Martin and McConnell (1991) found that gains are generated within a takeover by altering the non value maximising strategies of the target firm's managers. Takeovers can lead to improvements in the control and management of assets whilst moving assets to more productive uses (Jensen, 1986). It was also found that the corporate takeover market plays an important role in disciplining top corporate management (Scharfstein, 1988; Morck, Shleifer and Vishny, 1988; Martin and McConnell, 1991). The role of private equity acquisitions of publicly listed companies introduced more efficient and effective corporate governance mechanisms into the market, replacing the problems and agency costs associated with widely held ownership. This competition for the right to manage corporate resources impacts the retention of the incumbent management upon the successful completion of the takeover (Jensen, 1988).

The removal of managers can also solve the free cash flow problems inherent in poorly performing organisations, as cash flows are redirected to meet the increasing demands of leverage or to pay dividends to investors (Jensen, 1988). Thus, the removal of incumbent management in a takeover may reduce unproductive capital expenditures and organizational inefficiencies inherent in the divergence of management's interests to that of shareholders (Scharfstein, 1988). Additionally, the gains inherent from these changes and the efficiency improvements should be reflected in increases in the takeover premium.

It is therefore predicted that:

H₃ : A positive relation exists between changes in senior management and takeover premiums.

2.4 TAKEOVER PREMIUMS AND LEVERAGE

The role of leverage as a financing tool within takeovers has been well documented in the academic literature (Jensen, 1986; Lehn and Poulsen, 1989; Jensen, 1989; Kaplan, 1989, Fama and Miller, 1972). Leverage has been used extensively as a mechanism to increase returns on investment, however additional savings have been experienced through tax benefits and the reduction in agency costs associated with free cash flow wastage.

Based on Modigliani & Miller (1958), the incremental economic benefit of increasing leverage within the capital structure is positive when the return on assets outweighs the cost of borrowing. The benefits that are obtained from borrowing are magnified to the extent to which a firm borrows relative to its equity base. These benefits not only manifest through greater economic returns but through tax savings which are generated from deductions on interest payments. Kaplan (1989) and Schipper and Smith (1988) both presented evidence in their studies that the tax deductibility of interest in a private equity takeover is potentially a value source. The gains from using leverage can be achieved if the target is under leveraged prior to the takeover. Fama and Miller (1972) demonstrated that the use of debt increases the market value of the firm through the value of the tax shields on the interest payments. The benefits of utilising such strategies will accrue to the owners of the firm when the incentive to use leverage and the expected tax shields are greater than the monitoring costs and associated costs of financial distress.

Empirical evidence also provides the view that leveraged buyouts improve efficiency in the acquired firm. Kaplan (1989) showed that highly leveraged buyouts experience post-acquisition operating improvements and value increases. The discipline that such private equity buyouts, through increased leverage, can bring to a company includes divestment of non core assets and the focus on improving core operations. Jensen (1989) found that higher leverage levels creates the discipline that managers need to reduce investment programs in negative NPV projects, reduce costs and dispose of assets that are more valuable outside the company.

The role of highly leveraged transactions can also have significant implications in terms of agency costs. Specific agency costs associated with a dispersed ownership base include the wastage of free cash flows by management. Jensen (1986) found that conflicts of interest between shareholders and managers over payout policies are especially severe when an organisation generates substantial cash flows. The problem is how to force management to distribute these cash flows to shareholders rather than investing it at below the cost of capital or wasting it on organisational inefficiencies, (p. 323). Lehn and Poulsen (1989) found that the ratio of a firm's undistributed cash flow to its equity value was a significant determinant of a firm's decision to go private between 1984 and 1987.

Baker and Wruck's (1989), in their detailed case study on a management buyout found that increased financial leverage, in conjunction with renewed incentive plans redirected management's focus to improving the company's cash flow. Jensen (1986) also showed that large debt payments force managers to generate and payout cash flows and prevents management from wasting free cash flows. This study also demonstrated that as management often hold large equity stakes in the private equity bid, there are personal incentives to continue debt payments while generating value for the organisation (Jensen, 1986).

As private equity firms hold an ownership stake in the organisation and are directly involved in the management of its operations, this alignment of the incentives of the organisation should have a positive impact in reducing the agency costs associated with dispersed ownership. Grossman and Hart (1982) and Opler and Titman (1993) argue that the utilisation of debt in a buyout can be used to align the interests of management with investors in ways that cannot be duplicated with optimally designed compensation packages. It is expected that the utilisation of high levels of leverage will result in a reduction in agency costs associated with free cash flows, as observed in the studies by Jensen (1986) and Lehn and Poulsen (1989). It is these benefits of leverage, both as a mechanism to increase returns through tax savings and cash flows, which should be reflected in increases in the takeover premium by the private equity bidder.

Consequently, it is predicted that:

H₄ : An inverse relation exists between leverage and takeover premiums.

These four hypotheses are tested in the empirical design below.

3 EMPIRICAL DESIGN

3.1 SAMPLE AND DATA

This research investigates all private equity transactions within the U.S. market in the period 2003 - 2007⁷⁸. Due to data restraints, transactions were only recorded until the close of June 2007. This sample period also encapture changes to regulations which have incurred during the period, specifically those in relation to the implementation the Sarbanes – Oxley Act 2002.

The sample data was sourced from the Thomson Buyout News database, which details global private equity activity, and the CRSP database. Only firms with a deletion code of 233 within the CRSP database were included in this analysis, due to the code reflecting the payment of cash as consideration

⁷ 2003 was used as opposed to the implementation of the regulation in 2004 as anecdotal evidence suggests that firms were going private based on the expectation of the net costs imposed by SOX.

⁸ Takeover transactions were limited to firms operating on the New York Stock Exchange, the NASDAQ exchange, and the American Stock Exchange.

for the common shares of the target organisation. This payment method is commonly used in the majority of private equity transactions. The identification of private equity transactions within this deletion code transpired through the identification of the bidding party in the Definitive Proxy Statement, Form DEFM 14a.

The total number of public to private transactions, after exclusions, totalled 110.

Table 1 summarises the sample selection procedure:

TABLE 1: SAMPLE SELECTION

	2003	2004	2005	2006	2007	Total
Original Sample	34	31	34	62	43	204
Reason for Deletion:						
<i>Transaction not being classified as public to private</i>	9	9	10	8	5	41
<i>Lack of transaction information</i>	2	1	1	4	1	9
<i>Missing CRSP data</i>	5	2	3	3	5	18
<i>Negative takeover premiums</i>	1	4	4	11	6	26
Final Sample	17	15	16	36	26	110

3.2 VARIABLE DEFINITIONS

To test hypothesis one, we use two variables to measure corporate governance costs. The proxy used to measure for external monitoring is the continuous variable BLOCK, which measures the overall percentage of a firms stock held by shareholders with holdings greater than 5 per cent of the organisation. The role of block holders or institutional investors can act as an effective monitoring and disciplinary mechanism to reduce these costs. It is predicted that the greater the percentage of shares held by block shareholders, the less the costs of corporate governance, and the lower the takeover premiums associated with private equity transactions.

The second variable used to measure corporate governance costs is EXCOMP, which measures the magnitude of senior management's compensation as a percentage of the organisation's overall sales. Although prior studies such as Agrawal and Walkling (1994) have focused on overcompensation and takeovers bids, this proxy is seeking to measure whether the magnitude of executive compensation is directly reflected in the presence of a higher private equity takeover premium.

To test hypothesis two, we measure internal compliance costs associated with the implementation of SOX, using the variables by Ang et al (2000) which have been incorporated as proxies to capture the extent of these costs and their impact on takeover premiums. Costs of compliance can be reflected in the use of the variable SGAEXP, which is Sales, General and Administration expenses scaled by sales as a proxy to measure movements in agency costs. This ratio measures how effectively and efficiently management operate the organisation and includes direct agency costs, such as those associated with changes in internal control systems, and arbitrary consumption by management (Ang et al, 2000, Page 86). Of importance is the role of this variable in capturing the detrimental impact of implementing onerous internal control systems within the organisation. These costs should be clearly reflected in the period surrounding the enactment and implementation of SOX.

A second variable to measure for internal compliance costs is ASSUT, which incorporates asset utilisation as a gauge to determine the indirect costs of incorporating SOX into an organisation's operations. Such a measure specifically incorporates the costs associated with management inefficiently utilising assets, but can be seen as a measure incorporating the divergence of managements expertise to meeting the requirements of SOX. This ratio measures annual sales divided by total assets with a lower ratio indicating higher associated agency costs (Ang et al, 2000). Both the expense and asset utilisation ratio measure are evaluated by an industry wide standard to determine the magnitude of the changes and their impact on takeover premiums.

The third hypothesis is tested by a dummy variable, ΔMAN . This variable measures whether changes in senior management occur subsequent to the takeover announcement to the 12 months following the completion of the takeover.

The fourth hypothesis is tested using the variable, LEV . This variable measures the short term plus long term leverage of the firm over the retained equity of the target corporation. Similar measures were incorporated by Stevens (1973) and Palepu (1986) however the results from these studies were conflicting.

3.4 EXPERIMENTAL DESIGN

An OLS cross sectional regression model is formed based on the variables detailed in the empirical design:

$$\begin{aligned} PREM_t = & \beta_1 + \beta_2 EXCOMP_t + \beta_3 BLOCK_t + \beta_4 SGAEXP_t + \beta_5 ASSUT_t \\ & + \beta_6 \Delta MAN_t + \beta_7 LEV_t + \beta_8 AGE_t + \beta_9 WEAK_t + \beta_{10} SIZE_t + \beta_{11} BUSSEG_t \\ & + \beta_{12} GROWTH_t + \varepsilon \end{aligned} \quad (1)$$

- $PREM^9$: measures takeover premiums as the market adjusted return of the target firm between the announcement date and the completion of the takeover transaction. The offer price is extracted from the Definitive Proxy statement, Form Defm 14a, as reported by the target corporation. The average price is determined by extracting target firms Excess Returns vs. Index Series (CRSP item # Xstret) data from CRSP over the sample period. Kaplan (1990) utilised a similar market adjusted premium in his study on the value of tax within leveraged buyout activity however his base market was the S&P 500.
- $EXCOMP$: measures the executive compensation of the target corporation's management as a percentage of sales in the fiscal year preceding the takeover. This variable incorporates senior manager's base salary, bonuses, options¹⁰ and other associated forms of compensation and was extracted from Proxy statement Def 14a under the section "Executive Compensation". Sales are measured as CRSP item # 12.
- $BLOCK$: measures the percentage of shares held by block holders that own 5 per cent or more of the firm's outstanding voting stock. A similar variable was used by Ashbaugh-Skaife et al. 2006 as a measure of external monitoring by institutional shareholders. Shareholdings by block holders were extracted from Proxy statement Def 14a under the section "Beneficial Ownership of Company Common Stock".
- $SGAEXP^{11}$: This variable measures the proportion of the Sales, General and Administration expenditure (CRSP item # 189) of the corporation divided by its sales (CRSP item # 12). This figure is then compared to the industry average $SGA / Sales$ over the sample period in accordance with Ang et al 2000).

⁹ Alternative measures were utilised by Jensen and Ruback (1983) in their survey on target firms abnormal returns however these studies predominantly focused on the size of the cumulative abnormal return around the announcement date and not the composition or magnitude of takeover premiums.

¹⁰ The value of employee options is based on 25% of the exercise price. The 25% of exercise price method has been used in the prior literature, and is observed in studies by Core, Holthausen and Larcker (1999) and Coulton and Taylor (2002). Empirical evidence supports the use of this method by showing a high correlation between this basic method and more sophisticated methods (e.g. Black-Scholes).

¹¹ The deviation from the industry average is calculated in accordance with that prescribed in Ang et al (2000). Industries averages are based on 4 digit SIC codes, similar in nature to studies based on cumulative and abnormal returns around takeovers that have utilised these 4 digit codes (Martin and McConnell, 1990). Although Ang et al. (2000) calculated Sales, General and Administration expenditure as total expenses less cost of goods sold, interest expenses and managerial compensation, the CRSP database provides a more efficient method of calculation through CRSP item # 189.

- ASSUT¹²: This variable measures the proportion of Sales (CRSP item # 12) of the corporation divided by its Total Assets (CRSP item # 6). This figure is then compared to the industry average Sales / Total Assets over the sample period in accordance with Ang et al 2000).
- △MAN¹³: dummy variable which measures whether a change in top management (Classified as either a change in Chief Executive Officer or Chairman) occurs from the announcement date up to 12 months after the target corporation has been delisted from the stock exchange. A change in management is classified as (“1”) or (“0”) if management are retained. Data was collected from each Corporations Form 8-k statements, with emphasis on Items 1.01 and 5.02. Additional confirmation was sought where required from the Wall Street Journal and the Dow Jones Corporate Filings Alert.
- LEV: This variable is measured as short term leverage (CRSP item # 34) plus long term leverage (CRSP item # 9) divided by the common stockholders equity of the corporation (CRSP item # 216). A similar measure was utilised by Palepu (1986) in his paper on the predictive ability of takeover targets based on historical accounting data.

Control variables are included to accommodate for characteristics which could impact the internal control systems of the target firm. These control variables also include other factors identified within the literature as having a significant bearing on the magnitude of takeover premiums.

Control variables that are to be included in this regression equation are:

- AGE: this variable measures the age of the corporation based on the log of the number of years that have passed between the recording of the corporation on the CRSP database and its delisting date within the same database. Doyle et al. (2007) and Ashbaugh-Skaife et al. (2006) used a similar variable to control for firm characteristics, as firms of differing ages and phases are expected to possess different corporate governance and or internal control qualities.
- WEAK: this dummy variable measures whether a firm or its auditor has reported weaknesses in its internal control system within the sample period prior to the takeover. Those firms who have reported a weakness in internal control are classified (“1”) while those who have no reported weaknesses in internal controls are classified (“0”). A similar measure was used in Ashbaugh-Skaife et al. (2006) to measure internal control deficiencies. This data was obtained through the Compliance Weekly database or through individual corporations Form 10-k statements. Reporting on internal controls was minimal in the 2002 Fiscal year in Item 14 of the Form 10-k but changes to regulatory reporting increased the description and corporate analysis in the 2003 – 2006 years.
- SIZE: variable measuring the natural log of the corporations market capitalisation in the fiscal year prior to the completion of the takeover. Market value of equity is calculated as the closing price of the firms common shares (CRSP item # 199) multiplied by the number of outstanding common shares at the end of the fiscal year (CRSP item # 25). This variable was used by Doyle et al. (2007) and Zhang (2007) to control for firm characteristics in their measure of internal weaknesses and the corporate governance function of the firm. In the takeover literature, a direct relation between corporation size and takeover premium magnitude was observed by Kieschnick (1989) with corporations that have greater market capitalisations receiving smaller takeover premiums.

¹² The deviation from the industry average is then calculated in accordance with that prescribed in Ang et al (2000). Industry averages are based on 4 digit SIC codes, similar in nature to studies based on cumulative and abnormal returns around takeovers that have utilised these 4 digit codes (Martin and McConnell, 1990).

¹³ A similar measure was used by Martin and McConnell (1991) in their study of management retention after the completion of the takeover and whether prior performance impacted on this change. However, an extension of the time period has been utilised within this sample to incorporate post announcement management changes due to the increasing occurrence of such events within the data sample occurring before the completion of the takeover transaction.

BUSSEG: variable measures the natural log of the number of business segments an organisation competes in. This measures the dispersed nature of an organisation with a higher number of industries equating to greater decentralisation and complexity. Previous studies including Christie et al (2003) and Ashbaugh-Skaife et al. (2006) have used industry dispersion as a measure to control for firm characteristics associated with decentralisation and internal control weaknesses. Business segments were calculated using the Compustat Segment File, with business segments recorded as those that were active in the fiscal year prior to the takeover transaction.

GROW: This variable measures the sales growth of the corporation over the 3 fiscal years preceding the takeover transaction. Sales is measured as CRSP item # 12. This measure was used by Ashbaugh-Skaife et al. (2006) to control for internal control weaknesses and Christie et al (2003) to control for measures of decentralisation. A similar measure of growth was used by Lehn & Poulsen (1989) to determine the magnitude of takeover premiums.

The results from this regression are presented in Section 4.

4 RESULTS

4.1 DESCRIPTIVE STATISTICS

Descriptive Statistics are reported in Table 2 for all winzorised independent and control variables.

TABLE 2: DESCRIPTIVE STATISTICS

		N	Mean	Median	Std. Dev	Maximum	Minimum
PREM	%	110	0.21343	0.16943	0.16755	0.62542	0.00185
EXCOMP	\$	110	6.51511	6.53037	0.36358	7.51838	5.70338
BLOCK	%	110	0.37956	0.37150	0.17654	0.74900	0.00000
SGA	%	110	-0.00241	-0.04462	0.24506	0.52553	-0.51387
ASSUT	%	110	-0.00612	-0.08886	0.56266	1.19210	-1.24513
LEV	%	110	0.83531	0.45623	0.91476	2.62871	0.00000
AGE	Yrs	110	1.04815	1.04139	0.32181	1.77085	0.30103
SIZE	\$	110	2.19894	2.21860	0.80153	3.92530	0.64257
BUSSEG	No.	110	0.22570	0.00000	0.27926	0.90309	0.00000
GROWTH	%	110	0.04919	0.05180	0.14304	0.30404	-0.24270

Where:

PREM	Market Adjusted Return between announcement date and completion of takeover
EXCOMP	Log of the compensation of senior executives in the fiscal year prior to the takeover
BLOCK	Percentage shareholding by blockholders
SGA	Deviation of SGA / Sales compared to industry averages
ASSUT	Deviation of Sales / Total Assets compared to industry averages
LEV	Percentage of short and long term debt over retained equity
AGE	Log of the age of the firm
SIZE	Log of the market capitalisation of the firm
BUSSEG	Log of the number of business segments
GROWTH	Sales growth over the three years preceding the takeover.

The Premium dependant variable ranged from a positive 0.1 % to a 63 % while the average (median) takeover premium was 21 % (17 %). Within the Corporate Governance variables, the average (median) percentage of shares held by block holders is 38 % (37 %) while the average executive compensation per target firm is \$ 6.5 (\$ 6.5) in millions. For the internal compliance variables, the average (median) value of sales, general and administration expenses compared to industry averages is -0.02 % (-4 %) while the average (median) value of asset utilisation compared to the industry average is -0.6 % (-9 %). For the leverage variable, the average (median) of debt to equity was 84 % (46 %).

4.2 CORRELATIONS

The correlation coefficients of the independent variables and control variables are reported in Table 3.

TABLE 3: CORRELATION MATRIX ON COMPLETE SAMPLE

<i>n</i> = 110	Spearman's rho											
	PREM	EXCOMP	BLOCK	SGA	ASSUT	ΔMAN	LEV	AGE	WEAK	SIZE	BUSSEG	GROWTH
PREM												
EXCOMP	-0.2955***											
BLOCK	0.0383	-0.3075***										
SGA	0.0787	-0.0910	0.1172									
ASSUT	0.1299	-0.277***	0.2514***	0.0715								
ΔMAN	-0.0468	0.0992	0.0482	0.2494***	-0.1221							
LEV	0.0743	0.2359**	-0.1181	-0.0320	0.0520	-0.0851						
AGE	-0.0868	0.0356	-0.0015	0.0841	0.1927**	0.0911	-0.1174					
WEAK	-0.1912**	0.0588	0.0936	0.0944	-0.0158	-0.0365	0.0169	0.0677				
SIZE	-0.3735***	0.62***	-0.3617***	-0.1829*	-0.3694***	0.1139	-0.0252	0.1033	0.0341			
BUSSEG	-0.0225	0.1165	-0.1192	-0.0518	0.1398	-0.0343	0.0147	0.3064***	-0.0059	0.2196**		
GROWTH	-0.1584*	0.1779*	-0.0559	-0.1691*	-0.0988	-0.0409	0.0946	-0.0378	-0.0106	0.348***	-0.0025	

*** Significant at the 1% level (2-tailed)
 ** Significant at the 5% level (2-tailed)
 * Significant at the 10% level (2-tailed)

Where:

- PREM Market Adjusted Return between announcement date and completion of takeover
- EXCOMP Log of the compensation of senior executives in the fiscal year prior to the takeover
- BLOCK Percentage shareholding by blockholders
- SGA Deviation of SGA / Sales compared to industry averages
- ASSUT Deviation of Sales / Total Assets compared to industry averages
- ΔMAN Dummy variable measuring change in top management in the twelve months preceding the takeover
- LEV Percentage of short and long term debt over retained equity
- AGE Log of the age of the firm
- WEAK Dummy variable measuring internal control weaknesses over sample period
- SIZE Log of the market capitalisation of the firm
- BUSSEG Log of the number of business segments
- GROWTH Sales growth over the three years preceding the takeover.

It is clear that the majority of variables are not correlated with takeover premiums. Of note is the negative correlation with executive compensation; however the significant relation between executive compensation and size could be a major factor in this relation. Of the control variables, size is significantly correlated to takeover premiums, with a negative correlation between these two variables confirming prior research (Kieschnick, 1989). A negative correlation also exists between internal control weaknesses and takeover premiums. Additionally, a negative and significant correlation exists between growth and takeover premiums, an inverse correlation to that expected.

With reference to the prior literature and its focus on individual factors that influence the size of takeover premiums including the Martin & McConnell (1990) study on management changes, the Kaplan (1990) study on tax savings and the Lehn & Poulsen (1989) focus on the agency costs of free cash flows, it was determined that a linear relationship between the independent variables is uncertain due to the unique nature of each takeover transaction. Of note within the Lehn & Poulsen (1989) paper is that the results were split between two time periods before any results could be extracted from the data sample. With a varied sample size, and with the magnitude of takeover premiums varying significantly across the sample, it was determined that the separation of the sample into thirds based on the magnitude of the takeover premiums¹⁴ would offer greater insight into the impact of the independent variables on takeover premiums.

¹⁴ Issues arise within the data sample due to the exclusion of the negative premium firms and the splitting of data by segmentation of the dependant variable. By doing so, it potentially manufactures some dependence in the remaining sample between the error term and the independent variables. This potentially breaks the classical assumption of regression analysis that the independent variables are to be uncorrelated to the error term. As such, there may be some inherent bias in the results.

4.1 RESULTS FROM REGRESSION ANALYSIS

The results from the regression analysis are shown in Table 4 below.

TABLE 4: SUMMARY OF THE REGRESSION COEFFICIENTS FOR THE RELATION BETWEEN TAKEOVER PREMIUMS AND INDEPENDENT VARIABLES

Model:
$$PREM_i = \beta_1 + \beta_2 EXCOMP_i + \beta_3 BLOCK_i + \beta_4 SGAEXP_i + \beta_5 ASSUT_i + \beta_6 \Delta MAN_i + \beta_7 LEV_i + \beta_8 AGE_i + \beta_9 WEAK_i + \beta_{10} SIZE_i + \beta_{11} BUSSEG_i + \beta_{12} GROWTH_i + \varepsilon$$

# No. of Observations	Expected Sign	Full Sample [^]	Lower Third [^]	Middle Third [^]	Upper Third [^]
		110	36	37	37
INTERCEPT	?	0.83 2.5327**	0.0178 0.1626	0.373 1.581	-0.395 -0.8098
EXCOMP	+	-0.139 -1.1838	0.1394 0.4923	-0.1838 -0.7581	0.3229 2.0057*
BLOCK	-	-0.0791 -0.8139	-0.2821 -1.4222	0.1595 0.657	-0.1498 -0.965
SGA	+	0.1168 1.2246	-0.0988 -0.5036	-0.1155 -0.5894	0.3263 2.292**
ASSUT	-	-0.0068 -0.0671	0.18 0.9302	-0.0579 -0.2503	0.2386 1.4727
ΔMAN	+	0.0075 0.0795	-0.0706 -0.384	0.2405 1.1964	0.0633 0.4507
LEV	-	0.1131 1.1884	-0.5254 -2.8703***	0.0392 0.1649	0.1569 0.918
AGE	?	-0.0741 -0.7832	0.3311 1.8316*	-0.0719 -0.3288	-0.0404 -0.2816
WEAK	?	-0.1791 -1.9872**	-0.2604 -1.5845	-0.2154 -1.0549	-0.2469 -1.7738*
SIZE	-	-0.315 -2.2935**	-0.2123 -0.5966	-0.1589 -0.6268	-0.3916 -2.0798**
BUSSEG	-	0.1201 1.2293	-0.2837 -1.565	0.1398 0.6205	0.1333 0.8847
GROWTH	+	-0.0697 -0.7034	0.1423 0.7742	0.0063 0.0278	-0.2584 -1.4163
The Model					
F Value		2.9446	2.0766	0.7529	3.1461
Pr > F		0.0021***	0.0652*	0.6805	0.0085***
Adj R-sq		0.1641	0.2528	-0.0817	0.396

*** Significant at the 1% level (2-tailed)

** Significant at the 5% level (2-tailed)

* Significant at the 10% level (2-tailed)

[^] Analysis performed using OLS Regression

^{^^} Analysis performed using Stepwise Regression

Where:

PREM:	Market Adjusted Return between announcement date and completion of takeover
EXCOMP	Log of the compensation of senior executives in the fiscal year prior to the takeover
BLOCK	Percentage shareholding by blockholders
SGA	Deviation of SGA / Sales compared to industry averages
ASSUT	Deviation of Sales / Total Assets compared to industry averages
ΔMAN	Dummy variable measuring change in top management in the twelve months preceding the takeover
LEV	Percentage of short and long term debt over retained equity
AGE	Log of the age of the firm
WEAK	Dummy variable measuring internal control weaknesses over sample period
SIZE	Log of the market capitalisation of the firm
BUSSEG	Log of the number of business segments
GROWTH	Sales growth over the three years preceding the takeover.

Analysis was performed on the full sample using OLS regression analysis, and further analysis was undertaken when the sample was segmented into thirds. Table 4 displays the coefficients of the regressions when the independent and control variables have been included in the regression model.

The results from the OLS regression on the full sample model show that the coefficients of the control variables size and internal control weaknesses are negative and significant at the 5 per cent level. The negative relation between size and takeover premiums confirms prior research by Kieschnick (1998) while the negative relation between internal control weaknesses and takeover premiums could indicate further problems with the governance and compliance structure of the firm. However, the coefficients of the independent variables, although predominantly moving in the predicted direction, are not significant for the full sample.

In the OLS regression model performed on the lower third sample, it is observed that the coefficient on the leverage variable is negative and significant at the 1 per cent level. This is of importance as the relation is in the direction predicted in the hypotheses, indicating the private equity firms can add value through increasing debt levels in under leveraged firms. The coefficient of the control variable age is also positive and significant at the 10 per cent level. However, the results from this analysis are somewhat tempered by the low significance in the model for this data segment, with the potential to render these results inconclusive.

The regression model for the middle third sample was insignificant, leaving the results from this analysis inconclusive.

The coefficients of the regression for the upper third sample show a positive relation between levels of executive compensation and takeover premiums, significant at the 10 per cent level. This relation provides confirmation to the hypothesis that cost savings from the reduction in excessive levels of executive remuneration are reflected in a greater magnitude of takeover premiums. The coefficient for the relation between the deviation of Sales, General and Administration expenses to the industry average and takeover premiums is positive and significant at the 5 per cent level. This relation provides confirmation to the hypothesis on internal compliance costs that the increased costs of SOX compliance are leading to increases in takeover premiums. The size of the coefficient indicates that within this sample segment, the costs associated with public ownership and compliance form a significant component of the takeover premium that private equity firms are willing to pay. As such, it can be deduced that alternative organisation structures, including private equity, may be beneficial for such organisations to reduce the compliance costs associated with SOX.

Of the control variables, the coefficients show a negative relation between internal control weaknesses and takeover premiums at the 10 per cent level, while a negative relation also exists between size and takeover premiums at the 5 per cent level. The negative and significant coefficient on the internal control weaknesses variable could indicate that firms with such compliance problems may have greater underlying challenges than the implementation of SOX alone. However, the increased takeover premiums for firms with compliant internal control systems could indicate that such firms may have more effective compliance and governance structures, leading to greater firm efficiency. The negative and significant coefficient on the size variable supports prior research as to the negative relation between size and takeover premiums as shown by Kieschnick (1998).

When implementing changes to internal control reporting in 2002, the Securities and Exchange Commission introduced categories for differing corporations which dictated their corporate filing responsibilities (Exchange Act Rule 12b-2). These categories included accelerated and non accelerated filers, with one condition being that firms with a market capitalisation of greater than \$75 million at the close of the fiscal year being classified as accelerated filers. Accelerated filers were required to comply fully with SOX based regulation, whereas non accelerated filers were provided additional extensions until the 2008 fiscal year¹⁵. Thus the implementation of these regulatory guidelines would be expected to impact corporations within this sample differently.

¹⁵ SEC Press Release 2005-134, "SEC Votes to Propose Changes in Filing Deadlines and Accelerated Filer Definition; Postpone 404 Compliance Date for Nonaccelerated Filers; Propose Issuing Section 28(e) Interpretive Guidance"

Additional analysis was performed on the above models with the inclusion of a dummy variable to ascertain whether the classification of a firm as either an accelerated filer or a non accelerated filer significantly altered the expected relations. Firms with a market capitalisation greater than \$75 million at the end of the fiscal year preceding the takeover transaction are classified as (“1”) whereas firms not meeting this capitalisation level are recorded as (“0”). The results from these regression models are presented in Table 5.

TABLE 5: SUMMARY OF THE REGRESSION COEFFICIENTS FOR THE RELATION BETWEEN TAKEOVER PREMIUMS AND INDEPENDENT VARIABLES INCLUDING ACCELERATED FILER VARIABLE

Model:
$$PREM_t = \beta_1 + \beta_2 EXCOMP_t + \beta_3 BLOCK_t + \beta_4 SGAEXP_t + \beta_5 ASSUT_t + \beta_6 \Delta MAN_t + \beta_7 LEV_t + \beta_8 ACCFILER_t + \beta_9 AGE_t + \beta_{10} WEAK_t + \beta_{11} SIZE_t + \beta_{12} BUSSEG_t + \beta_{13} GROWTH_t + \varepsilon$$

# No. of Observations	Expected Sign	Full Sample [^]	Lower Third [^]	Middle Third [^]	Upper Third [^]
		110	36	37	37
INTERCEPT	?	0.7962 2.1589**	0.0318 0.2728	0.4682 1.8744*	-0.4017 -0.7003
EXCOMP	+	-0.1363 -1.1483	0.1408 0.4885	-0.1736 2.151**	0.3239 1.9069*
BLOCK	-	-0.0795 -0.8145	-0.2943 -1.4418	0.1996 -0.6646	-0.1503 -0.9384
SGA	+	0.1173 1.2233	-0.0863 -0.4272	-0.1505 0.4749	0.3265 2.2413**
ASSUT	-	-0.0078 -0.0767	0.1845 0.9354	-0.002 -0.3616	0.2386 1.4432
ΔMAN	+	0.0069 0.0728	-0.0734 -0.3924	0.2292 0.5636	0.0626 0.4285
LEV	-	0.1104 1.1433	-0.5131 -2.7187**	0.101 -0.2939	0.1552 0.8194
ACCFILER	+	0.032 0.2036	-0.0919 -0.4072	-0.4674 -1.0174	0.0059 0.0233
AGE	?	-0.0736 -0.7744	0.3341 1.8144*	-0.0077 1.0394	-0.0408 -0.2768
WEAK	?	-0.1747 -1.8760*	-0.2796 -1.6088	-0.2938 -0.1032	-0.2468 -1.7375*
SIZE	-	-0.2917 -1.6297	-0.2882 -0.7074	-0.5325 -1.5217	-0.3885 -1.6632
BUSSEG	-	0.1195 1.2167	-0.27 -1.44	0.1072 -0.833	0.1331 0.8643
GROWTH	+	-0.0687 -0.6892	0.1618 0.8378	0.0448 -2.5671**	-0.2563 -1.2322
The Model					
F Value		2.6763	1.8512	0.8008	2.7687
Pr > F		0.0038***	0.0988*	0.6466	0.0163**
Adj R-sq		0.1558	0.2259	-0.0711	0.3709

*** Significant at the 1% level (2-tailed)

** Significant at the 5% level (2-tailed)

* Significant at the 10% level (2-tailed)

Where:

PREM	Market Adjusted Return between announcement date and completion of takeover
EXCOMP	Log of the compensation of senior executives in the fiscal year prior to the takeover
BLOCK	Percentage shareholding by blockholders
SGA	Deviation of SGA / Sales compared to industry averages
ASSUT	Deviation of Sales / Total Assets compared to industry averages
ΔMAN	Dummy variable measuring change in top management in the twelve months preceding the takeover
ACCFILER	Dummy variable measuring whether target firm is Accelerated / Non Accelerated Filer
LEV	Percentage of short and long term debt over retained equity
AGE	Log of the age of the firm
WEAK	Dummy variable measuring internal control weaknesses over sample period
SIZE	Log of the market capitalisation of the firm
BUSSEG	Log of the number of business segments
GROWTH	Sales growth over the three years preceding the takeover.

[^] Analysis performed using OLS Regression

^{^^} Analysis performed using Stepwise Regression

The results from this analysis are similar in nature to those shown in Table 4, with significant relations previously discussed not differing to any great extent. However, of interest was that no significant relation existed between the dummy variable for accelerated / non accelerated filers and takeover premiums. This could indicate that the considerable discussion about the impact and compliance costs associated with SOX is inherently incorporated into private equity firm's analysis for all firms. Additionally, the multiple extensions¹⁶ for SOX compliance by non accelerated filers could influence capital markets perceptions, especially in relation to the expected costs that SOX compliance by such firms would impose.

4.3 SENSITIVITY TESTS

Sensitivity tests are conducted on the regression models from the original analysis to ensure the validity of the results obtained. This analysis involves regressing each independent variable separately with the control variables to determine the relation that existed with takeover premiums. These results (not reported) indicate no significant difference to the original results discussed. Several sensitivity tests are also utilised to investigate alternative independent variables, including those associated with corporate governance and internal compliance as well as alternative sample segments upon which the data has been divided. Again, the results obtained (not reported) do not substantially differ from the original results discussed.

Finally, sensitivity testing is conducted that focuses on the inclusion of a dummy variable to measure whether the quality of the Private Equity firm bidder impacts the magnitude of the takeover premiums. Anecdotal evidence suggests that private equity firms of a higher quality can, and will pay higher premiums where required to obtain control of target corporations. These higher premiums reflect the greater cost savings and efficiencies that higher quality firms can extract from the target corporation. The results from the inclusion of this variable indicate that while a positive coefficient exists for this variable, it is not significant in any of the models. Other major variables within the models did not differ significantly from the original results.

Sensitivity analysis is also conducted on the dependant variable of takeover premiums, in consideration of the use of differing methods within the academic literature to calculate this measure¹⁷. The results (not reported) generally support the original regression, but differ with the negative coefficient between the SGA expenditure variable and takeover premiums. These results provide some support to private equity firms acquiring firms that are more efficient than industry wide peers; however the lack of clear statistical significance on this variable inhibits the ability to make further analysis on the relation with takeover premiums. The breakdown of the data sample into thirds does not shed any further insight into this unexpected relation, due to the insignificance of the models.

Further sensitivity testing is performed to determine whether the results are driven by industry wide effects. Lehn, Netter, and Poulsen (1990) in their study on industry wide effects and their influence on the level of leveraged buyouts found that industries with lower growth prospects and lower research and development costs are more prone to buyouts. Although this study utilized 3 digit SIC codes for its analysis, and a similar study by Ambrose and Winters (1992) utilized 2 digit SIC codes, 1 digit codes are used for the purposes of this analysis due to limitations from the size of the data sample. A dummy variable was included in the original regression model which reflected each individual industry at the 1 SIC code level. The results from this sensitivity test show that the inclusion of these dummy variables provides no significant alternative outcomes to that presented in the original regression models. The inclusion of these industry codes has no tangible effect on the majority of regression models, with the results from models with SIC variable significance being rendered ineffective due to the low model significance. These results indicate that industry codes may impact the magnitude of takeover premiums to a minimal extent, however the inclusion of these variables in the model do not diminish the influence of the other significant variables. However, these results are tempered by the generalized inclusion of the different SIC codes, as a more detailed analysis could have provided instances of higher takeover premiums in specific industries.

¹⁶ The original implementation date was July 2005 for non accelerated filers which has been extended twice to the current date of July 2007 (SEC Press Release 2005-134)

¹⁷ Premiums are calculated using market prices 1 month, 2 months, 3 months and 3 to 5 months prior to the announcement date.

To expand the analysis of the sample, sensitivity testing is performed with the data separated in halves for further examination. The process for this additional data segmentation ensures that the data segmentation in the original models themselves was not adversely affecting the results. The results from this data split were inconclusive, as the segmented models were insignificant.

In addition, the data is also separated into quartiles. The separation into quartiles offers the opportunity for greater analysis of the impact that classifying the data has on the overall results. Due to data restraints, each independent variable was regressed with the control variables separately to determine the explanatory power of the model with their exclusion. The results from quartile 1 indicate that a negative coefficient exists for the relation between executive compensation and takeover premiums, significant at the 5 per cent level. Additionally, a negative relation exists between management changes and takeover premiums, significant at the 10 per cent level. These results differ from that predicted, however could be systematic of the characteristics of small segments of firms within the takeover market. Although no explanation can be provided for the inverse relation with executive compensation, the results of the inverse relation with management change could indicate private equity firm's willingness to retain target firm management, especially with their understanding and knowledge of the firms operations. The results from quartile 3 also indicate that a positive relation exists between shareholdings by block holders and takeover premiums, significant at the 5 per cent level. Although a negative relation is predicted for this variable, block holders could potentially influence the magnitude of takeover premiums by withholding support until a higher offer is presented. The models for quartile 2 and 4 were insignificant, rendering the results inconclusive.

Of interest within these smaller samples is the significance and influence of differing variables within the models. As transactions are quarantined, greater insight can be obtained through identifying the role of certain variables in these different segments, especially those measuring costs of corporate governance. A potential limiting factor to the analysis of these variables singularly is that they could not be regressed against other independent variables due to data constraints. Thus a greater understanding of their influence on the magnitude of takeover premiums cannot fully be deduced from the sample models, which could significantly influence the generalisability of the results presented.

Finally, a matched pair sample was examined to ensure that the characteristics of the transaction corporations were not significantly different from similar corporations based on 4 digits SIC codes and market capitalisation. Firms were matched based on a positive / negative 20 per cent of market capitalisation, with the average of firms results calculated when more than one matched pair existed. The total number of firms from the original sample totalled 73 for the purposes of this analysis. The variables that are utilised in this study include the SGA, ASSUT and leverage independent variables along with the growth dependent variable.

An independent t-test was first run on the winzorised data sample, with the results from the Levene's Test for Equality of Variances indicating that the variances of the different samples were not homogenous for the Asset Utilisation variable at the 10 per cent level. The results from the t-test for equality of means indicated that a difference in means existed for the growth variable, significant at the 1 per cent level. Non parametric tests were then performed on the data sample with results presented for both the Mann-Witney tests and the Wilcoxon test. Of the variables, only the growth variable was significantly different between the samples, with a z score of 2.983, significant at the 1 per cent level. The results indicate that a difference in the means is present in the growth sample, indicating the firms within the takeover transaction matched sample experience lower growth than the matched sample firms. However, no other results of significance were presented within this analysis, providing an inconclusive examination of whether the transaction firms have greater differences than the sample population.

The prior regression results indicate that a splitting of the sample population provides valuable information as to the trends and characteristics of firms within these smaller subsets. However the analysis of the full matched pairs dataset together may limit the findings deduced, as it has been observed that takeover transactions are unique and linear relationships of an extended sample cannot quantify the characteristics that define each transaction and the magnitude of the takeover premium.

5 DISCUSSION AND CONCLUSION

The objective of this study is to provide evidence on the takeover premium offered by private equity in terms of the costs of corporate governance and costs of internal compliance, the role of leverage to increase returns and reduce free cash flow wastage, as well as changes in the senior management team of the target firm.

The key results from this study suggest that internal compliance costs and corporate governance are both reflected in the magnitude of takeover premiums. In particular, it is found that within the different models, a positive relation exists between corporate governance, as seen through excessive executive compensation and takeover premiums, and furthermore, a positive relation exists between increases in Sales, General and Administration expenses and the magnitude of takeover premiums. This supports the hypotheses that the implementation of SOX has contributed significant net costs to the operations of corporations. Of the remaining independent variables, a significant and negative relation exists between takeover premiums and leverage, supporting prior research by Palepu (1986). However, we find no significant results between takeover premiums and asset utilisation and change of management. The extensive sensitivity analysis provides support for these conclusions.

Areas for future research would include the focus on individual private equity transactions and provide detailed analysis as to the characteristics of such transactions. This is especially important when firms auction themselves on the open market and indicate in proxy statements that a major factor pushing their privatisation in the implementation and imposition of new regulation under the Sarbanes-Oxley Act 2002. Further research could also identify the impact of varying agency related costs on the operations of firms and whether the private equity model, where net agency cost benefits are expected, is impinged by the agency costs of high leverage. However, despite its limitations, this study provides some important evidence on how the motivation and scope of private equity transactions has differed in the last decade.

REFERENCES

- Agrawal, A., Walkling, R. A., 2004, "Executive Careers and Compensation Surrounding Takeover Bids" *The Journal of Finance*, Vol. 49, No. 3, pp. 985-1014
- Ambrose, B. W., Winters, D. B., 1992, "Does an Industry Effect Exist for Leveraged Buyouts?" *Financial Management*, Vol. 21, No. 1, Leverage Buyouts Special Issue, pp. 89-101
- Ang, J.S., Cole, R.A., Lin, J.W., 2000, Agency Costs and Ownership Structure, *The Journal of Finance*, Volume LV, No. 1
- Arora, A., Pervaiz, A., 2005, "CEO Compensation and Stakeholders Claims", *Contemporary Accounting Research*, Volume 22, Number 3, pp. 519 - 547
- Ashbaugh-Skaife, H., Collins, D. W., LaFond, R., 2006, "The effect of Corporate Governance on Firms' Credit Ratings, Working Paper Series
- Ashbaugh-Skaife, H., D. Collins, W. Kinney, and R. LaFond, 2006, Internal control deficiencies, remediation and accrual quality. Working paper, University of Wisconsin, University of Iowa, University of Texas at Austin, and MIT.
- Baker, G. P., Wruck, K. H., 1989, "Organizational Changes and Value Creation in Leveraged Buyouts, The Case of The O.M. Scott & Sons Company", *Journal of Financial Economics* 25 (1989) 163-190.
- Bhagat, S., Schliefer, A., Vishny, R., 1990, "Hostile takeovers in the 1980's: The return to corporate specialisation, *Brookings Papers on Economic Activity: Microeconomics*, Special Issue, 1-72
- Brander, J. A., Poitevin, M., 1992, "Managerial Compensation and the Agency Costs of Debt Finance", *Managerial and Decision Economics*, Vol. 13, No. 1, pp. 55-64
- Brown, L. D., Caylor, M. L., 2006, "Corporate governance and firm valuation" *Journal of Accounting and Public Policy* 25 pp. 409-434
- Burkart, M., 1995, "Initial Shareholdings and Overbidding in Takeover Contests", *The Journal of Finance*, Vol. 50, No. 5 pp. 1491-1515
- Castagna, A.D., Matolcsy, Z.P., 1984 "Accounting ratios and models of takeover target screens : some empirical evidence", *Working Paper Series*, New South Wales Institute of Technology
- Christie, A. A., Joye, M. P., Watts, R. L., 2003, "Decentralisation of the firm: theory and evidence", *Journal of Corporate Finance* 9, 3-36
- Core, J. E., Holthausen, R. W. and Larcker, D. F., 1999, 'Corporate governance, chief executive officer compensation and firm performance', *Journal of Financial Economics*, vol. 51, pp. 371-406
- Coulton, J. and Taylor, S., 2002, 'Option Awards for Australian CEOs: The Who, What and Why', *Australian Accounting Review*, vol. 12, no. 1, pp. 25-35
- DeAngelo, H., DeAngelo, L., Rice, E. M., 1984, "Going Private: Minority Freezeouts and Stockholder Wealth", *Journal of Law and Economics*, Vol. 27, No. 2 pp. 367-401
- Dodd, P., Ruback, R., 1977, Tender offers and stockholder returns: An empirical analysis" *Journal of Financial Economics* 5, pp. 351-373.
- Doyle, J., Ge, W., McVay, S., 2007, "Accruals Quality and Internal Control over Financial Reporting", *The Accounting Review*, forthcoming
- Fama, E. F., Jensen, M. C., 1983 "Agency Problems and Residual Claims", *Journal of Law and Economics*, Vol. 26, No. 2, pp. 327-349

- Fama, E. F., Miller, M. H., "The theory of finance", Dryden Press Hinsdale, Ill
- Fama, E. F., 1980 "Agency Problems and the Theory of the Firm", *The Journal of Political Economy*, Vol. 88, No. 2, pp. 288-307
- Gillan, S. L., 2006 "Corporate Governance Recent Developments in Corporate Governance: An Overview", *Journal of Corporate Finance*, Volume 12, Issue 3, pp. 381-402
- Gompers, P., Lerner, J., 2000 "Money chasing deals? The impact of fund inflows on private equity valuation" *Journal of Financial Economics*, Volume 55, Issue 2, pp. 281-325
- Grossman, S. J., Hart, O. D., 1986, "The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration", *The Journal of Political Economy*, Vol. 94, No. 4 pp. 691-719
- Grossman, S., and Hart, O., 1980, Takeover bids, the free rider problem, and the theory of the corporation, *Bell Journal of Economics* 11, 42-64
- Harris, M. Kriebel, C. H., Raviv, A., 1982 "Asymmetric Information, Incentives and Intrafirm Resource Allocation" *Management Science*, Vol. 28, No. 6 pp. 604-620
- Hart, O., Moore, J., 1990, "Property Rights and the Nature of the Firm" *The Journal of Political Economy*, Vol. 98, No. 6, pp. 1119-1158
- Jensen, M., Smith, C. W., Smith, Jr., 1984 "The Modern Theory Of Corporate Finance", New York: *McGraw-Hill Inc.*, pp. 2-20,
- Jensen, M., 1988; Takeovers: Their Causes and Consequences, *The Journal of Economic Perspectives*, 2, 1; pg. 21
- Jensen, M., 1993, "The modern industrial revolution, exit, and the failure of internal control systems, *Journal of Finance*, 48, 831-880
- Jensen, Michael C., 2000, A Theory of the Firm: Governance, Residual Claims and Organizational Forms, Harvard University Press, December
- Jensen, M., Meckling, W., 1976, Theory of the firm: Managerial Behaviour, agency costs and ownership structure, *Journal of Financial Economics* 3, 305 – 360
- Jensen, M., 1986, "Agency Cost Of Free Cash Flow, Corporate Finance, and Takeovers" *American Economic Review*, Vol. 76, No. 2,
- Fama, E. F., Jensen, M., 1983, "Agency Problems and Residual Claims" *Journal of Law & Economics*, Vol. 26,
- Jarrell, G. A., Brickley, J. A., Netter, J. M., 1988, "The Market for Corporate Control: The Empirical Evidence Since 1980", *Journal of Economic Perspectives*, Vol. 2, No. 1, pp. 49-68
- Jensen, M., Meckling, W., 1995, "Specific and General Knowledge and Organizational Structure", *Journal of Applied Corporate Finance*, Vol. 8, No. 2, Summer
- Jensen, M., Ruback. R., 1983, The market for corporate control: the scientific evidence, *Journal of Financial Economics*, April, 11, Pages 5-50.
- Jensen, M., Murphy, K. J., 1990, "Performance Pay and Top-Management Incentives" *The Journal of Political Economy*, Vol. 98, No. 2, pp. 225-264
- Jensen, M., 2000, "A Theory Of The Firm: Governance, Residual Claims And Organizational Forms", *Harvard University Press*,

- John, T. A., John, K., 1993, "Top-Management Compensation and Capital Structure", *The Journal Of Finance* VOL. XLVUI. NO. a
- Kaplan, S. 1989 Management buyouts: evidence on taxes as a source of value, *Journal of Finance*, 64, 611-32.
- Kaplan, S., 1989. The effects of management buyouts on operating performance and value. *Journal of Financial Economics* 24, 217-254.
- Kaplan, R. S., Atkinson, A. A., 1998, *Advanced Management Accounting*, 3rd *Prentice Hall*, Upper Saddle River, New Jersey
- Kieschnick, R. L., 1998, "Free Cash Flow and Stockholder Gains in Going Private Transactions Revisited" *Journal of Business Finance & Accounting*, Volume 25 Issue 1&2 Page 187-202,
- Kini, O., Kracaw, W., Mian, S., 1995, "Corporate takeovers, firm performance, and board composition", *Journal of Corporate Finance* 1, 383-412
- Kummer, D., Hoffmeister, R., 1978, "Valuation Consequences of Cash Tender Offers", *Journal of Finance*, 33, 505-516
- Lehn, K., Poulsen, A., 1989, "Free Cash Flow and Stockholder Gains in Going Private Transactions", *The Journal of Finance*, Vol. 44, pp. 771-787
- Lehn, K., Netter, J. M., & Poulsen, A. B. (1990). Consolidating Corporate Control: The Choice between Dual-Class Recapitalizations and Going Private Transactions. *Journal of Financial Economics*, 27(2), 557-580.
- Lowenstein, L., 1985 "Management Buyouts" *Columbia Law Review*, Vol. 85, No. 4 pp. 730-784
- Manne, H. G., 1965 "Mergers and the Market for Corporate Control" *The Journal of Political Economy*, Vol. 73, No. 2, pp. 110-120
- Marais, L., Schipper, K., Smith, A., "Wealth Effects of going private for senior securities", *Journal of Financial Economics*, 23, pp. 155-191
- Martin, K. J., McConnell, J. J., 1991, Corporate Performance, Corporate Takeovers, and Management Turnover, *Journal Of Finance*. VOL. XLVI, NO. 2
- Modigliani, F., Miller, M., 1958, "The Cost of Capital, Corporation Finance and the Theory of Investment," *American Economic Review*.
- Morck, R., Shleifer, A., Vishny, R. W., 1989 "Alternative Mechanisms for Corporate Control", *The American Economic Review*, Vol. 79, No. 4, pp. 842-852
- Nathan, K. S., O'Keefe, T.B., 1993, "The rise in takeover premiums: An exploratory study", *Journal of Financial Economics*, 23 pp. 101-119
- Opler, T., Titman, T., 1993 The Determinants of Leveraged Buyout Activity: Free Cash Flow vs. Financial Distress Costs, *The Journal of Finance*, Vol. 48, No. 5, pp. 1985-1999
- Ortiz-Molina, H., 2007, "Executive compensation and capital structure: The effects of convertible debt and straight debt on CEO pay" *Journal of Accounting and Economics* 43 pp. 69-93
- Palepu, K. G., 1986 "Predicting takeover targets A methodological and empirical analysis", *Journal of Accounting and Economics*, Volume 8, Issue 1, pp. 3-35,
- Scharfstein, D., 1988, "The Disciplinary Role of Takeovers", *The Review of Economic Studies*, Vol. 55, No. 2, pp. 185-199

Securities and Exchange Commission (SEC). 2003a. *Final Rule: Management's Reports on Internal Control Over Financial Reporting and Certification of Disclosure in Exchange Act Periodic Reports*. Release No. 33-8238. Washington, D.C.: SEC. Available at: <http://www.sec.gov/rules/final/33-8238.htm>.

Shleifer, A., Vishny, R.W., 1997, A Survey of Corporate Governance, *The Journal of Finance*, Vol. LII, No. 2, June

Shleifer, A., Vishny, R.W., 1989, Management Entrenchment: The case of manager-specific investments, *Journal of Financial Economics*, 25, 123-140

Shleifer, A., Vishny, R. W., 1986. "Large Shareholders and Corporate Control," *Journal of Political Economy*, University of Chicago Press, vol. 94(3), pages 461-88, June.

Yermack, D., 1996 "Higher market valuation of companies with a small board of directors", *Journal of Financial Economics*, Volume 40, Issue 2, pp. 185-211

Zhang, I., 2007, Economic Consequences of the Sarbanes-Oxley Act of 2002, Working paper, University of Minnesota Journal of Accounting and Economics, forthcoming.