Going private decisions of Australian firms: An empirical investigation

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Abstract

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Key words: Going private, financial crises, business segments, and international subsidiaries.

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1. Introduction

This study investigates the determinants of Australian listed firms going from public to private. The number of firms going private[2] has increased considerably in Australia in recent years (Newell, 2006). In fact, firms becoming private have emerged as a new and important corporate restructuring mechanism especially, after the former Industry Minister Ian Macfarlane ushered in a new regime for private equity in 2002 to encourage foreign capital inflow in Australia (Reserve Bank of Australia, 2007). This new regime has led private equity transactions tripling to $26 billion from $7 billion in 2006 (excluding Japan), driven by billion-dollar investments in Australia and China. Australia accounted for $11.7 billion of this[3] which is an indicator of a strong growth of the private equity market in Australia[4]. Given the size, the value of transactions and the growth of this market, the economic forces (or determinants) that drive Australian firm to go from public to private in a contemporary setting are unknown. In particular, what role financial crises, firms being less salient and firm's international involvement play in the decision to go is an empirical question – thus the goal of this study.

It is important to examine and understand the significant roles these three determinants play in the decision to go private since going private may have an impact in increasing firm value and prevent wasting firms' valuable resources for a prolonged period. For example, to remain public can be costly (eg., listing and reporting costs documented by DeAngelo and DeAnglo (1987); no tax advantage (Kaplan,1989 a); agency conflict with widespread shareholdings (DeAngelo et al., 1984a, b); agency costs of free cash flow between shareholders and management (Opler and titman (1993); and high transaction costs in raising capital (Kim and Weisbach, 2008)) and one way to save these costs would be to become private. The earlier these savings are realised the better it is for firms as it may increase firm value. Booth (1998) documents that greater efficiency helps increase firm value and consequently increase the value of shareholders' wealth. Also, if these three

[2] The terms private firms and private equity are used interchangeably.

[3] http://www.metrics2.com/blog/2006/12/13/asia_pacific_private_equity_deals_tripled_in_2006.html and Reserve Bank of Australia (2007).

[4] Further, it has been reported that in recent years the M&A activity in the Asia Pacific region is positive and shows resilience during the Global Financial Crisis. This is especially boosted by several large deals in Australia, China and Japan (e.g., total deal value increased to US$421.4 billion in 2010 which is a 5% increase relative to 2009).

variables can rightly indicate the chances of going private in an earlier stage then this information can help corporate managers and shareholders in making decisions whether to remain public for unnecessarily longer periods if it is in fact better to become private. Despite the importance, Australian evidence is scant. To date, there is only one published Australian study which investigates the motivation of Australian firms going private (Eddey et al., 1996). They focus on the immediate relaxation of post-anti takeover provision of Australian firms starting to go private. However, their results have limited application in a contemporary setting. Hence, an Australian study investigating the determinants of firms going private, in particular giving consideration to financial crises, examining the importance of firms being less salient and firms' international involvement in addition to previously identified determinants, is timely. These determinants have not been considered before in any international (US, Europe and Asia) or Australian studies.

1.2.1 Financial crisis

Eddey et al. (1996) argue that the possibility of firms going private is relatively time-specific, with the precise context varying from one period to another. For example, a period of financial crisis is different from non-financial crisis in terms of economic growth, uncertainty in the financial market and business performance. It has been documented that businesses do not perform as well as they do during non-financial crisis time (Enright and Mak, 2003). It could be argued that during a financial crisis when firms perform poorly in their operation and running the business becomes relatively more costly and in these circumstances firms may choose to go private to save the publicly listed costs. While no study draws attention to the transaction costs theory of firms going private during crisis and non-crisis periods, this study makes a logical explanation relating the transaction costs to both these periods. For example, firms that are more responsive and susceptible to financial crises periods may find it relatively more costly to meet the reporting requirements. Given one of the main reasons for firms opting out from public to private is to save costs from preparing additional disclosures, detailed governance reports and extended financial reports for audit purpose (DeAngelo and DeAnglo (1987)), it is reasonable to argue that these firms are more likely to adopt private ownership than remain public during a financial crisis. DeAngelo et al. (1984a,b) and DeAngelo and DeAnglo (1987) argue that a publicly traded company chooses to go private to avoid costs associated with the

dissemination of information to a large number of dispersed shareholders. Similarly, Eddey et al. (1996) suggest that firms going private reduces registration, listing and other shareholder servicing costs such as the costs of printing and mailing financial reports and proxy statements as well as the time spent dealing with public shareholders, financial analysts and the financial press. They also state that savings can arise from avoiding auditing, accounting and legal fees necessary to satisfy reporting requirements applicable to publicly listed firms, such as those imposed by the Australian Stock Exchange. Further, it is argued that remaining as a publicly listed firm can be costly because of the fees that need to be paid to the stock brokers, registrars, lawyers, merchant bankers, as well as the exchange fee and the auditing, printing and distribution of accounts (Benoit, 1999). These costs may become relatively more expensive during a financial crisis as firms become less profitable. As such, this may be one of the reasons for more firms going private during crisis periods.

1.2.2 The salient argument

The salient argument is new to the firms' decision to go private literature and this study is the first to address this issue. Recently, Akhtar et al. (2011) develop a theory about stocks being 'salient' and investors' investment decision on these stocks at the event of a negative sentiment announcement in the market. They argue that stocks that are most likely candidates to be sold initially are those salient to the investor. Salient are more likely to be stocks that have greater analyst coverage, greater reporting in the press and a greater number of business segments (Akhtar et al. (2011). I extend this theory to firms making decision to go private especially if the stock shows no attributes of being a salient stock. The idea is that if firms do not get much public exposure due to being relatively young and small in size or have low visibility (low analyst following) in the market then as a consequence their share price/return may gradually drop. In relation to stock return declining, Merton (1987) provides an extension to the capital asset pricing model with relaxing the assumption of efficient information for all investors and shows that expected returns decrease with the size of the investor base, which he characterises as the "degree of investor recognition".

Following these theories, it can be argued that firms that have a lower degree of investors' recognition will struggle to perform well in the equity market especially competing with companies that have been in the market for a longer time, have more public exposure, are bigger in size, operate in multiple business segments

and have high liquidity. Therefore, firms that are not or less salient (low analyst coverage or visibility, small in size, younger, have less number of business segments, stocks are less liquid) may trigger to opt out from being a public firm to a private firm. Investors not recognising a firm can be costly which Chemmanur and Fulghieri (1999) refers this cost as the costs of information production by a large number of investors in public firms[5]. They suggest that if information production costs of outsiders increase or the stock price is not able to aggregate information effectively due to lack of liquidity, then more firms would choose to go private, since the value of the firm does not accurately reflect available information about the firm. Clearly, firms with less liquidity and less visibility (eg., no analysts forecast) will incur costs for not being salient and as a result it may lead them to opt out of being public firms to private firms.

1.2.3 International involvement

Geographical involvement may play an important role for firms considering going private. For example, firms that are more geographically dispersed may become harder to monitor. Akhtar (2005) describe that while it is believed there are several gains to be made by venturing into overseas markets, it can be argued that continued foreign expansion has increasing risks.

The implied assumption of earlier studies on geographical diversification, which were informed by financial theory and specifically addressed the issue of decreased shareholder risk through 'portfolio' diversification, was that the benefits of risk reduction were the sole reason why firms diversify internationally (Kim, Hwang and Burgers, 1989). However, the observed pattern of firms' diversification (such as their location of operations in culturally close countries with correlated business cycles) appears to be inconsistent with the portfolio hypothesis (Dess et al., 1995). Moreover, international diversification has been shown to increase firms' systematic risk (Reeb et al., 1998). Overall, the 'risk reduction' argument does not appear to be

[5] Ritter (1987) finds that variable costs, which are yearly layouts on auditing, certification, dissemination of accounting information, stock exchange fees, etc., are about 7% of the gross proceeds of the IPO. Further, disclosure rules in public markets that force companies to part with private information necessary for their competitive advantage might be an important consideration in the going-public decision, as pointed out by Campbell (1979) and Yosha (1995). Maksimovic and Pichler (2001) develop a model of the going-public decision driven by product market competition between innovative private firms in an industry. Raising capital in the equity market by going public allows a firm that is an industry leader to raise external capital at a cheaper rate than private financing, thus allowing it to implement its project at its optimal scale. However, going public has the disadvantage of releasing confidential information to competing firms, which can then compete more effectively with the firm going public. This theory and the importance of variable costs imply that the advent of SOX and the associated disclosure requirements might also prompt firms to go private, since confidentiality is a deterrent for obtaining funding in public markets.

working because it is understood that shareholders can readily diversify their portfolios through the stock market.

It is possible that the international dispersion can increase the risk of a firm by decreasing the ability to monitor managers (Lee and Kwok, 1988). Monitoring the managers, operations and creation of multiple reports for distant overseas locations is hard because of geographical constraints, cultural differences, timing issues, and so forth. As monitoring foreign operations becomes difficult and less effective, the risk (fluctuations) of the anticipated cash flows from overseas operation may increase. In addition to monitoring difficulties, international expansion can also have a negative impact on cash flow variability. For instance, the volatility of cash flows may increase through the increased level of corporate risk which is born by political factors such as host government appropriation, fund remittance control, and differences in government and regulations (Reeb, Kwok and Baek, 1998). Further, Burgman (1996) finds that factors such as increased exchange rate risks and greater tax uncertainty may increase the risks of firms that are more internationally involved. It is not known whether international diversification has an impact on firms in making decision to go private. Therefore, it is also an empirical issue how the international involvements of a firm significantly contribute to the decision to cease being public and become private.

This study complements and expands on previous studies ((Bharath and Dittmar (2010); Wright et al. (2003); Jackowicz and Kowalewski (2006); and Renneboog et al. (2007)) by considering a broader set of determinants with an inclusion of three newly developed determinants (financial crisis, firm being less salient and firm's international involvement) in an empirical setting in Australia. I employ a comprehensive sample of going-private transactions from 1988-2010 in Australia and examine Australian firms going private listed firms differ over their public life (from initial public offers to going private) relative to a sample of firms that went and remained public. This study employs a multivariate Logit analysis of a comprehensive list of determinants that indicates the likelihood of firms going private.

Results indicate that the newly developed three possible determinants – financial crisis, firms being less salient and geographical dispersion in foreign countries are highly important in firms making the decision to

go private. Among the existing theories, the tax benefit of debt and the access to the capital market are also important for Australian firms in making decision to go private. The determining factors are in fact present at the time of the IPO despite the fact that it takes on average about nine and a half years for a firm to go private. Firms that are in insurance, real-estate and banking sector seem to engage more in the privatisation type mechanism for corporate restructuring. Results also show that the majority of the determining factors remain similar across time. It is also interesting to find that shareholders seem to gain more if a firm chooses to go private during a financial crisis while the international involvement and industrial dispersion have a negative impact on the shareholders' wealth creation.

This paper is organised as follows. Section 2 provides an overview of the previously identified determinants of public to private transactions. Section 3 discusses the sample selection, lists the data sources and presents the model. Section 4 conducts the analysis and discusses the results from the regression models and the robustness check. Section 5 concludes and provides suggestions for future research.

2. Previously identified variables

In addition to the above proposed three new variables, a range of other variables is also considered following the previous literature (Eddey et al. (1996); Subrahmanyam and Titman (1999); Wright et al. (2003); Renneboog et al. (2007); and Bharath and Dittmar (2010)). The determinants that have been suggested by these studies are categorised into four different theories namely, information consideration, debt and tax transfer, access to capital and agency costs. Brief descriptions of these theories are provided below and the proxies for these four theories are presented in table 3 in section 3.

2.1 Information consideration

Subrahmanyam and Titman (1999) explains how the public market provides a trade-off between the costs of duplication of information and the benefits of serendipitous information (defined in their model as the information that stock market investors by chance come across in their day-to-day activities). Serendipitous information, though noisy, is likely to be diverse across market participants; thus, when aggregated across

many investors, it can provide a useful signal. They forecast that firms prefer to be public when the benefit of this signal outweighs the cost of duplication. This logic suggests that as the costs of generating serendipitous information increase, firms would choose to go private. They further suggest that serendipitous information is less available in firms with high R&D expenditures. It is therefore predicted that high R&D firms are more likely to go private.

2.2 Leverage and tax consideration

As the vast majority of public to private transactions take place with a substantial increase in leverage, the increase in interest deductions constitutes an important source of expected wealth gains (Rao et al., 1995), Gleason et al (2007) and Renneboog et al. (2007)). It is argued that low leverage geared companies are more likely to be going-private candidates due to the greater capacity to leverage up the company (Myers and Majluf, 1984) and also that firms initiate leverage buyouts due to the tax benefits of debt (Opler and Titman, 1993). Interest tax deductibility on the new loans constitutes a major tax shield increasing the pre-capitalisation value. For instance, firms with high tax bills benefit from going private, mainly because the large amount of debt used to finance the transaction creates a considerable additional tax shield which augments the value of the pre-capitalisation firm. Therefore a significant relationship is expected between firms going private and leverage and tax.

2.3 Access to capital and undervaluation

The opportunity to enter into public markets for equity capital is appealing for high growth firms with large current and future investments that may have limited access to other financing alternatives due to high leverage or high transactions costs and this is a leading reason why firms go public (Kim and Weisbach 2008). Thus, firms that do not have large investments and future growth opportunities are more likely to go private. A related motivation for becoming and being a public firm is to minimise the cost of capital for the firm and thus to maximise the value of the company. The lower the cost of capital in the public versus the private market, the greater the incentive to be a public firm. This argument has been advanced by Modigliani and Miller (1963) and Scott (1976). This argument suggests that as the cost of capital for firms increases in public

markets (e.g., due to increased information production costs or lower liquidity), firms are more likely to go private.

2.4 Free cash flows of agency costs

Jensen (1986) suggests that potential candidates for going private are firms where agency costs of free cash flows (FCF) are likely to be high, that is, firms with low growth prospects and large free cash flows (FCF). A number of researchers indicate that going private firms have lower growth prospects and large FCF Lehn and Poulsen (1989); Opler and Titman (1993); and Gleason et al (2007). When a firm has large cash flows, there is a conflict between shareholders and management over the management of these cash flows. Using empirical results on executive remuneration and corporate performance, Murphy (1985) argues that managers have incentives to retain resources and grow the firm beyond its optimal size – so-called 'empire building' – which is in direct conflict with shareholders' interests. By going private the interests of the parties can be aligned, especially in leverage buyouts due to the control function of debt (Jansen and Kleimer, 2003). High leverage associated with public to private transactions (PTP) will reduce wasting FCFs by bonding managers to pay out more cash flows to service the debt. This will be especially beneficial to firms that generate large amounts of FCF, on which there are little 'hard' claims by outside investors. It is expected that gains from PTPs are positively related to levels of free cash flows in the pre-transaction firms.

Further, according to Jansen and Kleimer (2003) high dividend payouts reduce the amount of free cash flows which are under control of management, and thus a high payout ratio can be viewed as an indicator of limited investment opportunities and high free cash flows. They find that a firm is more likely to go private the higher the dividend payout. Thus, the dividend payment are utilised to examine its impact on firms going private.

2.5 Other control variables

A range of control variables are considered. For example, targets' financial statuses are captured through target's book value per share, entity value and so on along with depreciation expense. Further, Renneboog et al. (2007) suggest that firms in different industries vary in terms of their participation rate in private transactions and therefore firms' industry memberships are also considered in this study. In addition, a range

of other control variables are also considered following Eddey et al. (1996) and Kaplan (1989a). For instance, whether a firm experienced any bid in the last 12 months before it finally went private, external ownership concentration (top 20 shareholders ownership) and insider ownership concentration (director's ownership).

This study employs two different approaches to detect the determinants of firms going private. First, it employs a technique similar to Bharath and Dittmar (2010) – using the data a year after the time of the IPO. Second, it employs traditional practice- using data the year before going to private. This is to identify if the determinants of firms are identifiable at the time of the IPO such that appropriate action can be taken (eg., decision to remain public lesser time or putting strategies in place such that take over for becoming private does not take place). Section below presents the data and models.

3. Data and Method

3.1 Sample selection

To investigate the determinants of Australian firms going private, the SDC database is used in the first instance to indentify all takeovers for Australian Listed companies from 1986 to 2010 inclusive. During this period an initial sample of 469 firms are identified between 1986 and 2010 and this is the most extensive sample among going private studies to date in the Australian literature. The data selection process is discussed below.

In the context of this study a public to private (PTP) transaction is defined as the 'Going Private' of a publicly listed company, including Management Buyouts (MBOs) and Leverage Buyouts (LBOs). The samples of 469 include a mixture of description in relation to a firm becoming private namely; completed, withdrawn, pending and status. For this study, those firms who completed the public to private transaction are identified as firms going private and this generated 163 firms. Four different major databases are searched to obtain relevant information for the theory proposed to be tested in section 1 and 2. Table 1outlines the process of reaching the final sample for both firms going private (163) and controlled firms (751). The control group is matched on the basis of size (total assets) and industry attribute and firms that had IPOs during a similar period but did not go private.

It is important to match using their size, industry attribute and similar IPO dates so that the variables of interest in this project are directly comparable between these two groups.

Table 1: Sample Screening

Description	Firms Going Private	Controlled Firms
Initial Sample	469	1263
Less non completed PTP	306	0
Less due to all data availability:		141
Less: Firms not on Worldscope		98
Less: Firms not on Compustat Global		74
Less: Firms not on Huntley's FinDataAnalysis		97
Less: Firms not on Connect 4		102
Total	**163**	**751**

Panel A in Table 2 reports the yearly distribution of firms completing a private transaction and list the number of control firms, while Panel B reports the distribution of each industry classification for firms going private and control firms. Panel A shows that there is an increasing trend over years of firms that go private. It is also evident that in some years there are relatively more firms engaged in public to private transactions. It turns out that these years are in fact financial crisis years. It shows that the proportion of firms that complete going private transactions is rather high during financial crises and this increase continues on for some subsequent years. For example, when Silverado Savings and Loan collapsed in 1988, during the Asian financial crisis in 1997 and the global financial crisis in 2007 the highest proportion of firms completed the public to private transaction (88%, 100% and 64%). It is also worth noting that the public to private transaction indeed increased substantially post 2002 when the new regime is introduced in Australia to encourage more private transactions. Panel B shows an almost equal distribution of sample selection across industries that are classified according to SIC (Standard Industrial Classification) Codes. It appears that a high proportion of firms going private takes place in Finance, Insurance and Real estate industries followed by service and manufacturing industries.

Table 2: Industry and Year distribution (Panel A)

Year	Obs	Completed public to private	% of PTP	Non-completed PTP	% of non-completed PTP	Control firms

		transaction				
1986	1	1	100%	0	0%	7
1987	3	1	33%	2	67%	6
1988	8	7	88%	1	12%	13
1989	9	2	22%	7	78%	9
1990	6	2	33%	4	67%	15
1991	12	2	17%	10	83%	25
1992	5	2	40%	3	60%	29
1993	9	7	78%	2	22%	30
1994	9	3	33%	6	67%	30
1995	2	1	50%	1	50%	36
1996	10	7	70%	3	30%	35
1997	10	10	100%	0	0%	39
1998	20	6	30%	14	70%	34
1999	16	9	56%	7	44%	33
2000	8	8	100%	0	0%	34
2001	19	8	42%	11	58%	37
2002	9	4	44%	5	56%	34
2003	21	13	62%	8	38%	43
2004	19	9	47%	10	53%	49
2005	14	8	57%	5	36%	52
2006	25	10	40%	15	60%	71
2007	28	18	64%	10	36%	72
2008	21	7	33%	14	67%	75
2009	24	12	50%	12	50%	88
2010	32	6	19%	26	81%	92
Total	**340**	**163**		**177**		**751**

Panel B: Industry Distribution

Industry	Total Obs	Firms going private	Control firms
Indus_A - Agriculture, forestry, & fishing (01-09)	47	4	43
Indus_B - Mining (10-14)	73	11	62
Indus_C - Construction (15-17)	48	2	46
Indus_D - Manufacturing (20-39)	160	31	129
Indus_E - Transportation & pub. utilities (40-49)	102	15	87
Indus_F - Wholesale trade (50-51)	132	22	110
Indus_G - Retail trade (52-59)	100	9	91
Indus_H - Finance, insurance, & real estate (60-67)	124	35	89
Indus_I - Services (70-89)	128	34	94
Indus_J - Public administration (91-97)	0	0	0
Total	**914**	**163**	**751**

3.2 Measurement of variables

Table 3 displays the variable constructions which are employed in the regression models and further analysis.

It also displays the expected sign of the variables explaining firms going private (Model 1).

Table 3: Measurement of variables

Variable abbreviation	Variable description	Variable construction
Dependent variables		
Firms going private	Firm completed going-private transaction	1 if firm has completed PTP, '0' otherwise.
Independent variables		
1. *Financial crisis*	Financial crisis	1 if a given year has experienced a financial crisis, '0' otherwise.
2. *The Salient*		
a. Business Segment	Business segments	Ln (total number of business segment).
b. Liquidity	Share turnover	Ratio of daily turnover volume over the past 12 months.
c. Analyst following	Analyst coverage	Ln(number of analysts following the firm in any fiscal year (set to '0' if missing)).
d. Size	Firm size in terms of total assets	Ln(total assets).
3. *International Involvement*	Intensity of international dispersion	Ln (number of countries a firm has its segments).
4. Information consideration	Research and development	Research and development expense/sales.
5. Leverage and tax consideration		
a. Total debt	Total debt	Long term+ short term debt)/total assets.
b. Tax	Tax expense	Income tax expense attributable to operating income/operating income before tax.
6. Access to capital		
a. Market to book	Market to book value	Market value of equity/book value of equity.
b. PE ratio	Price to earnings	PE ratio obtained from Datastream
c. Profitability	Profitability	Net income/Total assets.
7. Agency costs		
a. Free cash flows	Free cash flows	(OIBIT+DEP+AMO-TAXP-DIVP)/total assets[6].
b. Dividend payer	Firms paying dividend	1 if a firm paid out dividends during the fiscal year, 0 otherwise.
8. Control variables		
a. Top 20 shareholders	Top 20 shareholders ownership	Top 20 shareholdings/total (adjusted) ordinary shares.
b. Insider ownership	Board of director's ownership	Beneficial interest attributable to board of directors/total ordinary shares.
c. Prior takeover threat	If takeover threat was made in the last 12 months	1 if a takeover bid was made in preceding 12 months, '0' otherwise.

[6] OIBIT=Operating income before income tax, DEP=Depreciation expense, AMO=amortisation, TAXP=total tax paid and DIVP=total dividend paid.

d. Depreciation	Depreciation expense	Total depreciation expense/total assets.
e. Industry	Industry membership	1 if a firm belongs to a certain industry group, otherwise '0'.
Target firm's characteristics		
a. Target's book value per share	Target's book value per share prior to PTP	Target's book value per share
b. Target's equity value	Target's equity value	Ln (Target's equity value).
c. Target's entity value	Target's entity value	Ln (Target's entity value).
d. Target's transaction costs	Target's transaction costs in the event of going private	Transaction costs/total assets.
e. Foreign bidder	Bidder being a foreigner	1 if bidder is from overseas, otherwise 0.
f. Acquisition_LBO	Whether acquisition being via LBO	1 if LOBs, otherwise 0.
g. Acquisition_MBO	Whether acquisition being via MBO	1 if MBOs, otherwise 0.

3.3 Method and model

To examine the determinants that are significant in explaining the probability of firms going private, a Logit model is employed. The coefficients are estimated via a Logit model since the dependent variable is qualitative, taking the value of unity if the firm goes private, and zero otherwise, Several drawbacks are associated with an OLS estimation of the linear probability model, but the primary problem is that the predicted values of the dependent variable are not constrained to lie between zero and unity. This problem is overcome by a Logit estimation of the model which is appropriate in this project (Model 1):

$$\begin{aligned} Firms\ going\ private_{i,t} = {} & \beta_0 + \beta_1 Crisis_{i,t} + \beta_2 \sum Salient_{i,t-1} + \beta_3 Geographical\ dispersion_{i,t-1} + \beta_4 Information_{i,t-1} + \beta_5 Leverage_{i,t-1} \\ & + \beta_6 Tax_{i,t-1} + \beta_7 \sum Access\ to\ Capital_{i,t-1} + \beta_8 \sum Agency\ costs_{i,t-1} + \beta_9 \sum Control\ variables_{i,t-1} \\ & + \beta_{10} \sum Industries_{i,t-1} + \beta_{11} \sum Target's\ Charecteristics_{i,t-1} + \varepsilon_{i,t} \end{aligned}$$

4. Analysis and results

4.1 Univariate analysis

Table 4 (Panel A) presents the target and matched control firms' financial characteristics such as EBIT, EBITDA, enterprise value etcetera (reported in A$ Million) a year prior to going private while Panel B contains descriptive statistics and mean differences of the variables used in the regression model. Panel A shows that target firms which went private have significantly less entity value (t=1.93), net assets (-2.73) and pretax income (-2.06) relative to the control firms which remained public.

Table 4: Financial Characteristics between Firms going private vs. remained pubic

Panel A

	Going private (A$Mil)		Control firms (A$Mil)		Mean difference
	Mean	**Median**	**Mean**	**Median**	**(t-test)**
Book value per share	0.73	0.60	4.13	0.70	-1.31
equity value	179.87	44.00	263.21	69.25	-0.94
EBIT	11.02	3.55	13.72	0.70	-0.27
EBITDA	16.85	7.10	43.65	5.30	-1.23
EPS	0.08	0.05	-1.68	0.00	1.05
Target' Equity value	276.00	71.70	618.12	86.10	-1.52
Entity value	346.08	91.65	883.83	154.50	-1.93*
Net assets	187.94	47.90	287.15	75.80	-2.73*
Net income	30.82	3.65	16.85	1.15	-1.07
Net sales	182.45	73.80	503.86	75.50	0.74
Pre tax income	13.02	4.00	17.41	1.70	-2.06***
Share price	1.31	0.80	2.78	0.90	-0.35

This table presents the target firm's characteristics information which is collected from SDC. The characteristics are defined as follows: target's book value per share is the value of share as per its book value, target's equity value is the Ln (Target's equity value). Similarly, target's entity value is the Ln(target's entity value). Foreign bidder, and acquisition technique being management buyouts and leverage buyouts are defined as 1 if bidder is from overseas, otherwise '0'; 1 if acquisition was through LBOs, otherwise '0'; and 1 if acquisition was through MBOs, otherwise '0' respectively. Lastly industry information is captured by nominating 1 if a firm belongs to a certain industry group, '0' otherwise (INDUS). ***, **, * indicate statistical significance at the level of 1, 5, and 10%, respectively.

Panel B presents two different sets of the mean test results. The second last column's test results are based on firms' characteristics a year after the IPO and this is conducted following Bharath and Dittmar (2010), while the last column presents t-statistics of the sample drawn a year prior to going private. Results obtained in both columns are very similar. It shows that Australian firms that are committed to going private, on average they tend to have their operations in a significantly higher number of foreign countries (t = 6.64 and 4.98) but operate less sectors within an industry (t = -2.76 and -2.88). It is also observed that firms going private have significantly lower stock market liquidity (t = -2.83 and -2.13) as opposed to the public firms. In contrast, firms going private exhibit rather significantly higher external ownership (t = 2.61 and 2.51) and depreciation expense in comparison to their counterparts (public firms). Finally, firms that end up being private are also smaller in size (t = -1.67 and -2.55). It appears that it takes on average approximately nine and a half years (from IPO date) for Australian firms to opt out of public to private transactions[7]. While these univariate results

[7] Firm's age is calculated as the natural logarithm of date of IPO to the day they went private.

on individual variables are interesting, a better perspective can be drawn from multiple Logistic regression analysis where all the firm characteristic variables are put in testing together to see the combined effect on a firm's decision to go private. Appendix B provides the correlation matrix table for both firms going private and control firms. Given no harmful collinearity is observed it is arguably sound to employ all the suggested variables in the regression model. The variance inflation factors (not presented in tables) of the regression confirm that the results are not biased by multicollinearity.

4.2 Multiple regression analysis

Table 5 reports multiple Logistic regression test results and reveals several interesting findings. All data are examined on annual basis, at the first year following the IPO date and the year prior to previous private transaction. Colum 1 in Table 5 presents the comprehensive lists of variables which will help us assess the importance of intrinsic characteristics of the firms that can be used to successfully predict the going-private decision. Note that results of Colum 1 to 6 in Table 5 use data at the first year following the IPO date and this approach is similar to Bharath and Dittmar (2010), while Column 7 presents results based on the traditional method (eg., using data a year prior to going private).

Panel B: Descriptive Statistics for continuous variables

	Going Private = Obs 163					Controlled Group = Obs 751					Mean Diff at IPO	Mean Diff at PTP
	Mean	**Med**	**STD**	**Min**	**Max**	**Mean**	**Med**	**STD**	**Min**	**Max**	**t-test**	**t-test**
BUS_SEG	3.83	4.00	1.89	2.00	9.00	4.55	3.00	1.56	1.00	9.00	-2.76***	-2.88***
LQUIDITY	8.70	9.28	3.31	0.00	14.12	10.01	10.31	2.83	0.00	15.68	-2.83***	-2.13***
ANALYST	12.82	12.63	2.81	7.14	19.45	12.37	12.61	2.70	5.84	19.78	1.07	1.09
SIZE	10.98	11.12	2.06	4.83	14.62	11.54	11.41	2.29	6.68	16.35	-1.67*	-2.55**
INT_SEG	2.18	1.00	1.44	0.00	5.00	1.37	1.00	1.61	0.00	7.00	6.64**	4.98**
RD	0.18	0.00	0.38	0.00	2.82	0.15	0.00	0.29	0.00	1.82	0.56	1.52
DEBT_TD	0.22	0.22	0.21	0.00	0.95	0.22	0.19	0.23	0.00	1.28	0.21	1.11
TAX	0.31	0.29	1.19	0.02	0.65	0.33	0.24	2.62	0.05	0.48	-0.57	-1.19
GROWTH	3.68	0.22	0.44	0.03	4.10	3.83	0.40	3.23	0.35	0.29	0.87	0.98
PE	5.78	8.30	3.79	0.30	8.00	4.75	5.20	6.13	0.41	11.00	-1.05	-1.34
PROF	-0.42	0.00	0.23	-1.00	0.30	-0.04	0.00	0.23	-1.20	0.40	0.51	0.88
FCF	-0.13	-0.03	0.32	-1.21	0.76	-0.23	-0.03	0.95	-8.36	0.24	0.88	0.93
DIV	3.07	0.68	6.89	0.00	1.00	3.41	1.69	4.24	0.00	1.00	-0.40	-1.20
TOP_20	0.72	0.75	0.19	0.04	0.99	0.64	0.70	0.22	0.11	0.99	2.61***	2.51***
INSIDE	0.22	0.03	0.67	0.00	0.57	0.21	0.05	0.60	0.00	0.52	0.67	0.87
PRIOR_TAKEOVER	0.13	0.00	0.34	0.00	1.00	0.14	0.00	0.35	0.00	1.00	-0.30	-1.12

DPN_EXPNSE	0.06	0.04	0.12	0.00	1.04	0.03	0.02	0.03	0.00	0.17	2.47***	2.77***
AGE	2.26	2.18	1.99	0.69	3.46							

This table reports descriptive statistics and mean test results. Independent variables: Crisis is measured as 1 if a given year has experienced a financial crisis, '0' otherwise. Business segment is measured as Ln(total number of business segment). Liquidity is the ratio of daily turnover volume over the past 12 months. Ln(number of analysts following the firm in any fiscal year (set to '0' if missing)). Size is the Ln(Total assets). INT_SEG represents geographical dispersion and is measured as Ln(number of countries a firm has its segments). RD is calculated as the research and development expense/sales. Total debt is measured as long term + short term debt)/total assets. Tax is the ratio of the income tax expense attributable to operating income/operating income before tax. Growth is market value of equity/book value of equity. PE ratio is obtained from Datastream. Profitability is the net income/total assets. Free cash flows are measured as per Lehn and Poulsen (1989). Dividend payers are identified as 1 if a firm paid out dividends during the fiscal year, '0' otherwise. Top 20 shareholders' ownership is measured as the Top 20 shareholdings/total (adjusted) ordinary shares. Insider ownership is calculated as the beneficial interest attributable to the board of directors/total ordinary shares. Prior takeover is captured as 1 if a takeover bid was made in the preceding 12 months, '0' otherwise. Depreciation expense is calculated as the total depreciation expense/total assets. ***, **, * indicate statistical significance at the level of 1, 5, and 10%, respectively.

Results indicate that the probability of Australian firms going private during the financial crisis period is highly significant (z=1.97). The result remains strongly significant when industry memberships (Column 2: z=2.50) are controlled, and as well as across various sample periods (Column 3-7: z = 2.22; 1.94; 2.15, 1.98 and 2.05). This implies that during the financial crisis there is more likelihood of firms becoming private. This is consistent with Enright and Mak's (2003) argument that firms generally do not perform as well during financial crisis as they do during the non-financial crisis periods and as a result, the costs to remain public during this time become relatively higher. Therefore, firms choose to go private such that savings can be made by avoiding the disclosure reports, extended financial reports and detailed shareholders' reports. This finding also supports arguments of firms choosing to be private to avoid costs associated with the dissemination of information to a large number of dispersed shareholders (DeAngelo et al. (1984) and DeAngelo and DeAnglo's (1987)). Further, this finding can be linked and extended to Eddey et al.'s (1996) arguments: for instance if a firm can circumvent the costs of auditing, accounting and legal fees which are necessary to satisfy reporting requirements to the delegated authorities (eg., Australian Stock Exchange and Australian Securities and Investment Commissions) during financial crisis, then firms are more likely to go private.

A strong support for the salient argument seems to hold for firms deciding to go private. Multiple proxies have been employed to capture the effect of investors' recognition of a firm (being salient). If a firm is regarded as a salient firm then it indicates that this firm is in the mind of the investors. A firm can be in the mind of an investor when it gets lots of public attention through high analyst forecasts, high turnover of its shares in the

equity market, has more business segments and is larger in size. The result show that a significant negative relationship is observed for the number of business segments (z= -2.38), liquidity (z= -1.98) and analyst forecasts (z= -2.90) in determining the likelihood of Australian firms going private. These results suggest that having less business segments, lower liquidity in the equity market and less analyst following can have a significant impact for Australian listed firms to go private. This is consistent with Merton (1987), Chemmanur and Fulghieri (1999) and Benoit (1999). No significant relationship is observed with the size of a firm and its decision to go private. These results are insensitive to industry memberships and sample periods (Columns 2-7).

The geographical dispersion coefficient plays a significant (z = 1.97) role for Australian firms in their decision to go private. This indicates that as the number of business segments increases it becomes difficult for firms to monitor operations in distant locations in foreign countries. Further, it could also mean that Australian listed firms do not benefit from being geographically diversified because the risks involved in operating in those countries born by political factors such as host government appropriation, fund remittance control, differences in government and regulations outweigh the benefit of being diversified, which is consistent with Reeb et al. (1998) argument. This is also consistent with the argument of Burgman (1996) who finds that factors such as increased exchange rate risks and greater tax uncertainty increase risk for firms which are more internationally involved. It appears that all the above arguments seem to hold for Australian listed firms and contribute to the likelihood of going private.

Among the lists of explanatory factors suggested in the previous studies in the US and Europe a set of factors that are considered such as information consideration, tax, access to capital market and free cash flows. Some interesting results are observed. For example, Subrahmanyam and Titman's (1999) information consideration is found to be only significant when the data is used based on the year prior to going public to private. I argue that this evidence is quite weak as the result is quite sample specific.

Table 5: Logistic Regression of Australian firms going private

	Baseline Regression (1986-2010) – Year following IPO (Column 1)		Baseline Regression (1986 – 2010) – Year following IPO with Industry (Column 2)		Baseline Regression (2006-2010) – Year following IPO (Column 3)		Baseline Regression (2000-2005) – Year following IPO (Column 4)		Baseline Regression (1994-1999) – Year following IPO (Column 5)		Baseline Regression (1986-1993) – Year following IPO (Column 6)		Baseline Regression (1986-2010) – Year prior to PTP (Column 7)		Eddey et al. Model (1986-2010) – Year prior to PTP (Column 8)	
Variables **(Panel A)**	***Coeff***	***z-stat***	***Coeff***	***z-stat***	***Coeff***	***z-stat***	***Coeff***	***z-stat***	***Coeff***	***z-stat***	***Coeff***	***z-stat***	***Coeff***	***z-stat***	***Coeff***	***z-stat***
C	1.89	1.17	1.13	1.55	1.30	1.42	1.82	1.29	0.30	1.18	0.53	0.11	0.89	0.80	0.98	2.58**
CRISIS	0.10	1.97*	0.18	2.50**	0.20	2.22**	0.13	1.94*	0.15	2.15**	0.11	1.98*	0.16	2.05**		
BUS_SEG	-0.36	-2.38**	-0.37	-2.33**	-0.44	-2.51**	-0.54	-2.02**	-0.48	-2.05**	-0.26	-1.24	-0.27	-3.15***		
LQUIDITY	-0.20	-1.98**	-0.17	-1.72*	-0.22	-1.94*	-0.27	-2.07**	-0.29	-2.01**	-0.36	-2.35**	-0.35	-2.16**		
ANALYST	-0.09	-2.90***	-0.09	-2.76***	-0.09	-2.81***	-0.04	-2.04**	-0.07	-2.53**	-0.09	-2.54**	-0.10	-2.49**		
SIZE	-0.10	-0.57	-0.30	-1.55	-0.12	-0.63	-0.10	-0.56	0.03	0.18	0.26	0.89	0.13	0.37		
INT_SEG	0.06	2.27**	0.10	2.40**	0.09	2.35**	0.36	2.32**	0.30	2.12**	0.27	2.02**	0.14	2.40**		
RD	0.22	0.24	0.61	0.64	0.85	0.58	0.23	0.62	0.58	1.11	1.90	1.44	-0.87	-2.38**	0.75	0.78
DEBT_TD	0.82	0.49	0.21	1.17	0.69	1.37	0.61	1.35	0.15	1.58	0.26	1.17	0.14	1.29		
TAX	-0.03	-2.62**	-0.01	-3.39***	-0.03	-2.83**	-0.02	-2.47**	-0.02	-0.35	-0.04	-0.95	-0.10	-2.04**	-0.01	-2.23**
GROWTH	-0.01	-1.92	-0.01	-1.09	-0.01	-1.27	-0.02	-1.34	-0.01	-1.19	-0.01	-1.29	-0.01	-1.84**	-0.07	-0.89
PE	-0.01	-2.46**	-0.01	-3.13***	-0.02	-2.56**	-0.00	-2.19**	-0.00	-1.86*	-0.00	-0.75	-0.00	-0.84		
PROF	-0.38	-2.79***	-0.15	-2.76***	-0.23	-2.80***	-0.31	-2.97***	-0.16	-2.90***	0.16	-2.51**	-0.46	2.73**		
FCF	0.34	1.11	0.40	1.07	0.50	0.31	0.11	0.07	0.58	0.41	0.44	0.31	0.21	0.14		
DIV	0.01	0.25	0.02	0.51	0.01	0.38	0.00	0.01	0.02	0.37	0.08	0.60	0.21	2.36**		
TOP_20	0.31	-2.17**	-0.73	-2.43**	-0.57	-1.97**	-1.10	-2.05**	-1.07	-2.14**	-1.13	-2.57**	-0.23	-2.12**	-1.09	-2.95***
INSIDE	0.11	3.02***	0.13	2.41**	0.21	2.11**	0.31	2.37**	0.19	3.26***	0.22	3.32***	0.27	3.21***	0.13	2.61**
PRIOR_TAKEOVER	0.35	0.43	0.08	0.10	-0.04	-0.05	0.95	0.75	0.59	0.48	0.01	0.99	-0.20	-0.84	0.06	0.22
DPN_EXPNSE	1.81	2.97***	1.17	2.35***	1.06	2.40**	1.87	2.48**	1.14	2.41**	1.30	2.58**	1.79	2.04**	1.98	2.92***
TARGETBVPS													-1.98	-3.81***		
TGT_EQTYVALUE													2.36	4.29***		
TGT_ENTVLU													-2.20	-4.01**		
FORGN_BIDDER													-0.46	-2.18**		

ACQ_LBO							-1.86	-2.12**
ACQ_MBO							1.34	0.58
A_INDUS		-1.91	-1.30				-1.42	-1.54
B_INDUS		-0.64	-0.37				-0.71	-0.73
C_INDUS		-0.68	-0.53				-0.58	-0.53
D_INDUS		-1.42	-1.55				-1.12	-1.55
E_INDUS		-0.72	-0.73				-0.92	-0.81
F_INDUS		1.04	0.75				1.04	0.76
G_INDUS		0.46	0.24				0.46	0.29
H_INDUS		-2.27	-2.33**				-1.31	-2.59**
McFadden's R-sqr	0.37	0.43		0.38	0.41	0.42	0.38	0.41	0.14
Prob (LR statistics)	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00
No. of obs	1514	1514		804	798	787	775	1514	1514

The underlying Model is:

$$Firms\ going\ private_{i,t} = \beta_0 + \beta_1 Crisis_{i,t} + \beta_2 \sum Salient_{i,t-1} + \beta_3 Geographical\ despersion_{i,t-1} + \beta_4 Information_{i,t-1} + \beta_5 Leverage_{i,t-1} + \beta_6 Tax_{i,t-1} + \beta_7 \sum Access\ to\ Capital_{i,t-1} + \beta_8 \sum Agency\ costs_{i,t-1} + \beta_9 \sum Control\ variables_{i,t-1} + \beta_{10} \sum Target's\ Charecteristics_{i,t-1} + \beta_{11} \sum Industries_{i,t-1} + \varepsilon_{i,t}$$

This table reports Logistic regression results of firms going private. The dependent variable is 1 if a firm has completed PTP, '0' otherwise. Independent variables: Crisis is measured as 1 if a given year has experienced a financial crisis, '0' otherwise. Business segment is measured as Ln (total number of business segment). Liquidity is the ratio of daily turnover volume over the past 12 months. Ln(number of analysts following the firm in any fiscal year (set to '0' if missing)). Size is the Ln(total assets). INT_SEG represents geographical dispersion and is measured as Ln (number of countries a firm has its segments). RD is calculated as the research and development expense/sales. Total debt is measured as long term+ short term debt)/total assets. Tax is the ratio of the income tax expense attributable to operating income/operating income before tax. Growth is market value of equity/book value of equity. PE ratio is obtained from Datastream. Profitability is the net income/total assets. Free cash flows are measured as per Lehn and Poulsen (1989). Dividend payers are identified as 1 if a firm paid out dividends during the fiscal year, '0' otherwise. Top 20 shareholders' ownership is measured as the Top 20 shareholdings/total (adjusted) ordinary shares. Insider ownership is calculated as the beneficial interest attributable to the board of director's/total ordinary shares. Prior takeover is captured as 1 if a takeover bid was made in preceding 12 months, '0' otherwise. Depreciation expense is calculated as the total depreciation expense/total assets. The target firms' characteristics information is collected from SDC and is defined as: target's book value per share is the value of share as per its book value, target's equity value is the Ln(target's equity value). Similarly, target's entity value is the Ln (target's entity value). Foreign bidder, and acquisition technique being management buyouts and leverage buyouts are defined as 1 if bidder is from overseas, otherwise '0'; 1 if LBOs, otherwise '0'; and 1 if MBOs, otherwise '0' respectively. Lastly industry information is captured by nominating 1 if a firm belong to a certain industry group, '0' otherwise (INDUS). ***, **, * indicate statistical significance at the level of 1, 5, and 10%, respectively.

The leverage and tax consideration shows that the tax coefficient in particular appears significantly (Column 1: z = -2.62 or Column 7: z = -2.04) important in explaining the likelihood of firms going private. It is also found that the acquisition technique of leverage buyouts is also significant (z = -2.18). This result is supportive of Titman and Opler's (1993) argument that firms with high tax bills benefit from going private, mainly because the large amount of debt used to finance the transaction creates a considerable additional tax shield which augments the value of the pre-capitalisation firm.

Among the three variables of market to book (z = -1.92), price to earnings (z = -2.46) and profitability (z = -2.79) (that are supposed to capture the firms' ability to access capital market) become significant implying that these variables carry important information for firms to make decision to go private. The idea is that if it costs too much to raise external funds for investment at the growth stage of firms existence then it is likely that firms will opt out from being public to private. In addition, it is also possible that when firms are in a growth stage it is not possible to know in advance whether their investment is going to generate positive returns. For instance, a lender might find the borrowers who are in a growth stage relatively riskier to lend capital and hence charge high interest rates to compensate for the risks of debt default. Firms that belong to this type may find it easier to become private instead and correct for the poor investment decisions. This is consistent with Denis (1990).

I find no significant support for agency costs related theories for Australian firms that may induce them to go private. This result is consistent with Eddey et al. (1996). Furthermore, some of the control variables also became significant in showing their importance in the likelihood of Australian firms going private. For example, top 20 shareholders' ownership, board of directors' ownership and depreciation expense are highly significant (z= -2.17; 2.97 and 3.02, respectively).

It is comforting to observe that the sign and the number of coefficients' significance remain unchanged when the industry effects have been controlled for. Similarly, the regression has been re-estimated by rolling forward five years and repeating the Logit analysis following Column 1 regression setting (industry is not controlled due to fewer observations as roll forward and have

impact on the degree of freedom) in each of the next five years. This procedure is applied to capture the time variant effects of the determining factors and it is evident that most of the variables mentioned earlier remain consistently significant with an exception of price to earnings ratio and tax. Also, due to the lack of observations at any given year, a yearly regression is not considered.

Results reported in Column 7 use data based on a year prior to firms ultimately going private. It is remarkable to see that there is only a slight variation of the significant determining factors that explain the probability of firms going private. It appears that firms that belong to Finance, Insurance and Real estate industries go private more often than firms in other industry memberships. This result is consistent with the sample distribution presented in Table 2 (Panel A). Lastly, I conduct a regression analysis by employing the same set of variables as Eddey el al. (1996) over the sample of this study Column 8 in Table 5)[8]. To be comparable with their results, Column 8 uses data on annual basis, with the year prior to the public to private transaction. Column 8 indicates that only 10% of the results are similar and 90% are dissimilar than theirs. A possible explanation for this might be that the determining factors for firms to go private might have changed over time perhaps due to the dynamics of firms operating in a financial system. Also, their results could be sample driven because they use 46 Australian PTP completed firms over 1988 – 1991 while I find only 22 firms in that sample period and I chose not to run a regression due to the small number of observations. The core finding of their result is that they find only the prior takeover bidding factor (indication of takeover threat) is statistically significant which I do not find significant. This variable captures the extent of the occurrence of a previous takeover bid during the 12 months prior to going private. The significance of this variable in their model has been justified on the ground that the surge in takeover activity around the period from which their observations are drawn may have experienced some "threat" other than via an explicit offer. However, applying the same model I find that top 20 shareholders ownership, depreciation expense, tax and director's ownership are highly significant (z = -2.95; 2.92; -2.23 and 2.61, respectively) for Australian firms in going private. Given the fact that the explanatory

[8] The results are somewhat striking and interesting because only 10% are similar and 90% are dissimilar compared to theirs. Unfortunately, due to lack of data availability I could not run their model using the same sample period. Nevertheless, to making sure results in this research are valid and unbiased a range of tests are conducted.

power of the model is only 14% and the intercept is significant (z = -2.58) indicating other factors may need to be considered to obtain a better explained model. As such I employ Model 1 which incorporates a broad range of determining factors for further investigation of the factors that explain firms to go from public to private (results in Columns 1 to 7).

Unlike any of the past research papers, this study employ various target firms' characteristics to examine whether these characteristics have any influential impact in determining firms going private. I argue that these determinants are important to consider given the inclusion of these variables generates higher significance in the explanatory factors and the adjusted R-square increases by approximately 6%. Also, individually each of the factors is tested for an omitted variable test and every single one of them became significant which justifies their inclusion in the model. Note that the characteristics of targets are not considered in the results presented in Columns 1 – 7 because one can argue the data for these variables is only applicable prior to PTP but not following IPOs. The significant determining factor to consider are book value per share (z = -3.81), equity value (z = 4.29) and enterprise value (z = -4.01), among others (for example, whether the acquirer is from a foreign country (z = -2.18) and the leverage buyout acquiring technique that bidders put in place (z= -2.12)).

In summary, the results obtained above suggest that at the time of IPO many of the factors that determine whether a firm will go private are seen at the time of the IPO itself. Thus, it can be suggested that the inherent characteristics of the firms at the IPO and the changes that happen to firms when they are public determine if the firms will ultimately go private. The thrust of this finding is that if a public firm's manager is concerned about the significant determinants to look for to evaluate their decision to go private, according to the results it shows that they do not necessarily have to wait very long since evidence is observable at the time of IPO.

In Table 5, Panel B, I present the economic impact of a one-half standard deviation change in each variable using the coefficients from Column 3 and Column 8 of Panel A in Table 5 on the probability of going private. The predicted probability of going private for Columm 3 of panel A in Table 5 is

7.42% while for Column 8 it is 7.11% which are presented in Column 1 and 2 of Panel B in Table 5, respectively in Panel B. The result implies that a one-standard deviation increase in top 20 shareholders' ownership increases 1.12% a year following the IPO date while it is 1.30% a year before public to private transaction completion date, approximately one seventh of the predicted probability.

Table 5: Economic Significance

***Variables* (Panel B)**	***Change in Probability (%) A year after IPO date***	***Change in Probability (%) A year before PTP complete***
CRISIS	0.89	0.59
BUS_SEG	-0.51	-1.53
LIQUIDITY	-0.65	-0.86
ANALYST	-2.97	-2.11
SIZE	0.93	0.78
INT_SEG	-0.44	-1.48
RD	-0.87	-0.33
DEBT_TD	0.94	2.44
TAX	-0.90	-0.64
GROWTH	-0.90	-0.79
PE	0.80	-0.66
PROF	-1.25	-1.33
FCF	-0.77	-0.74
DIV	0.71	1.67
TOP_20	1.12	1.29
INSIDE	0.97	1.29
PRIOR_TAVKEOVER	-0.96	-0.55
DPN_EXPNSE	1.95	2.04
TARGETBVPS		-0.49
TGT_EQTYVALUE		0.64
TGT_ENTVLU		-0.77
FORGN_BIDDER		-0.88
ACQ_LBO		-0.92
ACQ_MBO		0.88
A_INDUS	-0.52	-0.84
B_INDUS	-0.21	-0.98
C_INDUS	-0.33	-0.69
D_INDUS	-0.25	-0.58
E_INDUS	-0.27	-0.72
F_INDUS	0.14	0.76
G_INDUS	0.39	0.93
H_INDUS	-0.11	-0.79
E(Private|X)%	7.42	7.11

Similarly, a one-half standard deviation increase in depreciation expense increases the probability of going private by 1.95% and 2.04% depending on a year prior and a year after the IPO and PTP completion date which are approximately 26% and 29% of the predicted probability. Further, a one-half standard deviation decrease in analyst's forecasts increases the probability of going private by 1%, approximately one-half the predicted power.

4.3 Further analysis

The determinants that are argued to be possible factors to go private are also tested for shareholders' wealth impact in the event of going private. In relation to shareholders' wealth increase or decrease, Model 1 has been re-estimated by using cross-sectional regressions where the dependent variable is the premium. Premium confines the measurement of wealth effects to the premium offered to the shareholders in the event of going private. It is calculated as the natural log of final offer price of the winning bid to pre-takeover share price. This measurement has been employed by Eddey et al. (1996). Results are presented in Table 6. The full sample of public to private firms transactions have been included (163 observations) and the number of independent variables remains the same as before (Table 5). The OLS regressions for premia are measured over three time intervals; one day, one week and four weeks prior to the completion of transaction. The model in Table 6 is tested for the presence of heteroscadesticity by means of a White test (White, 1980) and the result are not biased by multicollinearity which was discussed earlier.

The newly introduced three variables are significant in explaining the shareholders' gains and losses in the event of firms going private. For example, during crisis time, firms going private has a significant positive impact (t=2.10, 2.02 and 1.85 across 1 day premium, 1 week premium and 4 weeks premium). However, the international involvement and operations in more industrial sectors is significantly negatively related in explaining shareholders' wealth/premium. For instance, I find that the significance of a firm being dispersed in terms of its operation in multiple international geographical segments (t = -2.79 and -1.89 for 1 day and 4 weeks premium) and also the industrial

dispersion within an industrial sector (t = -1.99, -1.98 and -1.96) are negative and highly significant. These results are in agreement with monitoring problems and investors' low visibility findings which were discussed earlier.

Table 6: Shareholders wealth gain/loss analysis using premium

	Baseline Regression of Premium paid 1 day		Baseline Regression of Premium paid 1 week		Baseline Regression of Premium paid 4 weeks	
Variables	***Coeff***	***t-stat***	***Coeff***	***t-stat***	***Coeff***	***t-stat***
C	1.07	0.39	0.57	0.21	0.84	0.29
CRISIS	0.43	2.10**	0.40	2.02**	0.43	1.85*
BUS_SEG	-0.07	-1.99**	-0.08	-1.98**	-0.09	-1.96*
LQUIDITY	-0.05	-1.10	-0.05	-1.11	-0.05	-1.03
ANALYST	0.07	1.21	0.08	1.34	0.08	1.16
SIZE	-0.05	-0.29	-0.02	-0.14	-0.02	-0.11
INT_SEG	-0.08	-2.79***	-0.07	-1.89*	-0.07	-0.68
RD	0.58	0.66	0.14	0.47	0.08	0.23
DEBT_TD	0.10	2.24**	0.06	2.14**	0.02	2.05**
TAX	0.01	2.60**	0.01	2.55**	0.02	2.85**
GROWTH	0.02	1.77*	0.01	1.69*	0.00	0.03
PE	-0.00	-0.51	-0.00	-0.52	-0.00	-0.37
PROF	-0.01	-3.01***	-0.02	-2.03**	-0.13	-2.21**
FCF	0.13	0.94	0.14	1.00	0.13	0.75
DIV	0.04	1.61	0.03	1.46	0.03	1.30
TOP_20	-0.68	-2.95***	-0.59	-2.78***	-0.88	-1.96**
INSIDE	-0.02	-3.98**	-0.03	-2.94***	0.02	-1.98**
PRIOR_TAKEOVER	0.19	1.99**	0.74	2.65**	0.37	0.87
DPN_EXPNSE	-1.33	-1.53	-1.55	-1.63	-1.71	-1.50
TARGETBVPS	0.04	1.60	0.04	1.57	0.04	1.60
TGT_EQTYVALUE	0.62	1.74*	0.62	1.68*	0.76	1.71*
TGT_ENTVLU	-0.65	-1.62	-0.65	-1.60	-0.76	-1.57
FORGN_INVEST	0.42	2.97***	0.47	2.16**	0.43	1.72*
ACQ_LBO	1.48	1.92*	1.62	2.05**	1.83	1.92*
ACQ_MBO	1.74	2.09**	1.96	1.97**	2.11	1.93*
Adjusted R-sqr	0.52		0.53		0.47	
No. of obs	163		163		163	

The underlying Model is:

$$Premium\ paid_{i,t} = \beta_0 + \beta_1 Crisis_{i,t} + \beta_2 \sum Salient_{i,t-1} + \beta_3 Geographical\ despersion_{i,t-1} + \beta_4 Information_{i,t-1} + \beta_5 Leverage_{i,t-1} + \beta_6 Tax_{i,t-1} + \beta_7 \sum Access\ to\ Capital_{i,t-1} + \beta_8 \sum Agency\ costs_{i,t-1} + \beta_9 \sum Control\ variables_{i,t-1} + \beta_{10} \sum Industries_{i,t-1} + \beta_{11} \sum Target's\ Charecteristcs_{i,t-1} + \varepsilon_{i,t}$$

This table reports OLS regression results of premia for 1 day, 1 week and 4 weeks. The dependent variable is 1 if the firm has completed PTP, '0' otherwise. Independent variables: Crisis is measured as 1 if a given year has

experienced a financial crisis, '0' otherwise. Business segment is measured as Ln (total number of business segment). Liquidity is the ratio of daily turnover volume over the past 12 months. Ln(number of analysts following the firm in any fiscal year (set to '0' if missing)). Size is the Ln(total assets). INT_SEG represents geographical dispersion and is measured as Ln (number of countries a firm has its segments). RD is calculated as the research and development expense/sales. Total debt is measured as long term+ short term debt)/total assets. Tax is the ratio of the income tax expense attributable to operating income/operating income before tax. Growth is market value of equity/book value of equity. PE ratio is obtained from Datastream. Profitability is the net income/total assets. Free cash flows are measured as per Lehn and Poulsen (1989). Dividend payers are identified as 1 if a firm paid out dividends during the fiscal year, '0' otherwise. Top 20 shareholders' ownership is measured as the Top 20 shareholdings/total (adjusted) ordinary shares. Insider ownership is calculated as the beneficial interest attributable to the board of director's/total ordinary shares. Prior takeover is captured as 1 if a takeover bid was made in preceding 12 months, '0' otherwise. Depreciation expense is calculated as the total depreciation expense/total assets. The target firms' characteristics information is collected from SDC and is defined as: target's book value per share is the value of share as per its book value, target's equity value is the Ln(target's equity value). Similarly, target's entity value is the Ln (target's entity value). Foreign bidder, and acquisition technique being management buyouts and leverage buyouts are defined as 1 if bidder is from overseas, otherwise '0'; 1 if LBOs, otherwise '0'; and 1 if MBOs, otherwise '0' respectively. Lastly industry information is captured by nominating 1 if a firm belong to a certain industry group, '0' otherwise (INDUS). ***, **, * indicate statistical significance at the level of 1, 5, and 10%, respectively.

The tax coefficient is positive and significant (t = 2.60, 2.55 and 2.85) across one day, one week and four weeks. This suggests that firms with higher pre-transaction tax bills will benefit more from the interest deductibility associated with increased leverage. It is also reassuring to find that the leverage coefficient is also positive and significant (t = 2.24, 2.14 and 2.05) across all three time related premia. This may imply that bidders are willing to pay high premia to high leveraged firms finding these firms fully utilising their debt capacity for the tax advantage of additional interest deductibility. I have also re-estimated a regression (results not reported) with interaction terms of taxes and performance and the interaction was significant (t = 2.98 for one day and one week (t = 2.34)) which may imply that bidders are willing to pay more for target firms with high past earnings profitability. This argument is consistent with Renneboog et al. (2007) although they fail to find any significant relationship for UK firms. Also, the acquisition technique being through leverage buyout appears positive and significant (t=1.92, 2.05 and 1.93) which is consistent with the debt related tax argument.

In agreement with the undervaluation theory, the higher the discrepancy between market value relative to positional value under private ownership (book value) of the firm, the larger will be the wealth gain (Renneboog, 2007). The growth variable is found positive and significant for 1 day and 1

week premia ((t= 1.77 and t=1.69, respectively) which is consistent with the theory. Further, firms' performance (return on asset) appears positive and significant implying that firms' past high book performance will have a positive impact on shareholders' wealth gain. Finding the target's profitability positive and significant (t= -3.01, -2.03 and -2.21) further validates the earlier explanation. Further, Renneboog (2007) argue that due to information asymmetry, managers are best placed to identify undervaluation such that the impact of past share performance on the premium and wealth effects is larger for MBOs. Results in Table 6 also confirm this theory as the coefficient of acquisition technique turns out to be positive and significant (t = 2.97, 2.16 and 1.92) across 1 day, 1 week and 4 weeks' variation in the premium explanation.

The strongly negative relation for the top 20 shareholders' ownrship variable show that lower levels of control by firms are associated with larger expected wealth gains upon going private. This finding is consistent with the fact that firms owning large equity stakes perform a monitoring mechanism.

The directors' equity ownership is negative and significant (t = -3.98, -2.94 and -1.98). It supports the incentive realignment argument in a sense that the higher premia are paid for firms with low directors' stakes/interest in the firm. I also test using different magnitudes of directors' ownership (greater than 10%, 15%, 20% and 25%) and the results become more significantly negative (not reported). The additional negative impact of very high directors' equity ownership (greater than 25%) is also consistent with the fact that this share block discourages other bidders (not belonging to the management) to make a counter bid (Stulz, 1988).

According to the free cash flows (FCFs) theory, in Table 6 it shows that going private is not driven by the need to return FCFs to the shareholders since this coefficient is found insignificant. This result complements the high leverage ratio and tax results found earlier, suggesting Australian firms do not have excess cash flows in their hand for 'empire building' and instead firms rely on leverage to finance their investments. This result is consistent with Eddey et al. (1996).

4.4 Robustness

In order to test the robustness of the model, the residuals and the drop in deviance test are conducted. It is focused on the Pearson residuals, which are the observed binomial response subtracted by its expected mean, standardised by the estimated standard deviation (Ramsey and Schafer, 2002). The residuals tend to behave like a standard normal distribution and values outside the range of +/- three standard deviations treated as potential outliers. For both Tables (5 and 6) no outliers are evident and therefore estimates obtained in this study are reliable and robust. In addition, no pattern of heteroscedasticity is observed and this confirms the independence of the data. Also, the overall significance of the models is tested using the drop in deviance test (maximum likelihood). A high chi-square suggests that that the regression results presented in Table 5 Panel A and Table 6 are significant.

5. Conclusion

Using the longest horizon data from 1986 to 2010 in Australia, I explore a comprehensive list of variables that determine Australian firms to opt out from public to private. The results in this paper extend and complement the existing literature of private equity around the world. Although Eddey et al. (996) conducted a similar study in Australia, my study differs and contributes to theirs at least in four different dimensions: First, the inclusion of financial crisis, salient feature of firms and international involvement; second, a longer time horizon including most recent data (24 years: 1986 to 2010 *versus* 4 years: 1988 to 1991); third, the analytical procedure (variables tested based on the yearly observation data following the IPO year *and* a year prior to PTP *versus* only prior to PTP year data); fourth, a comprehensive list of variables including industry and targets' characteristics *versus* ten different variables with no control for industry effects. Further, the test of the relative importance of each of these factors in examining the public lifecycle of firms from IPO date to the date of going-private decision across time intervals is also a new aspect of this study.

The key results of this research are threefold. First, using the annual observation following a year after the IPO, I find the newly introduced determinants (financial crisis, firm being salient and geographical

dispersions) to be highly important in dictating the likelihood of Australian firms' decision to go private. Some theories that have been developed in the US and Europe as indicative of firms to go private also seem to hold for Australian firms. For instance, the tax benefit of debt and undervaluation of a firm appear strongly significant as a possibility of firms choosing to go private. Interestingly no significant relationship is observed between the well documented free cash flows argument and firm opting out from public to private and this is consistent with Eddey et al. (1996). Second, using the yearly observation a year prior to going private, the numbers of significant variables remain about 95% similar to those results obtained a year after the IPO period. These two complementary results imply that despite the fact that the descriptive statistics show it takes on average about nine and a half years for Australian firm to opt out of public to private, one can reliably predict that they will go private at the time of the IPO. Many of the factors that significantly determine the duration of public life also significantly predict who will go private using data in the year following the IPO. Third, over years the significant factors remain almost same across different time periods for the sample that has been utilised in this study. Finally robustness tests results suggest that the results in this project are reliable.

References

Akhtar, S., Faff, R., Oliver, B. and Subrahmanyam, A., 2011, Decomposing the Effect of Consumer Sentiment News -Evidence from US Stock and Stock Index Futures Markets. Working paper, Australian National University.

Akhtar, S., 2005, The determinants of capital structure for Australian Multinational and Domestic corporations, *Australian Journal of Management*, 30(2), 321-341.

ASIC report, 02/234 ASIC responds to Clerp 9 and WorldCom accounting disclosures , June, 2002.

Amihud, Y., 1989, Leveraged management buy-outs, Dow-Jones Irwin, New York.

Bharath, S. T., A. K. Dittmar, 2010, Why do firms use private equity to opt out of public market?, *The Review of Financial Studies* 23(5), 1772-1818.

Benoit, B., 1999, Companies and Finance: UK: professional expenses prove a deterrent to maintaining stock market exposure: but costs of public-to-private deals can also be considerable, Bertrand Benoit Reports, *The Financial Times* of August 31, 1999, 18.

Block, S., 2004, The Latest Movement to going private: An empirical study, *Journal of Applied Finance* 14, 36-44.

Booth, L., 1998, What drives shareholder value?, Presented at Federated Press "Creating shareholder value" Conference, October 28, 1998.

Burgman, T.A., 1996, "An Empirical Examination of Multinational Corporate Capital Structure", *Journal of International Business Studies*, 27(3), pp. 553-557.

Campbell, T. 1979. Optimal Investment Financing Decisions and the Value of Confidentiality. *Journal of Financial and Quantitative Analysis* 14:913–24.

Chemmanur, T. J., P. Fulghieri, 1999, A theory of the going-public decision, *The Review of Financial Studies* 12, 249–279.

Cook, D.O., J. C. Easterwood, J. D. Martin, 1992, Bondholder wealth effects of management buyouts, *Financial Management* 21, 102–113.

Crowe, D. (2007) "Private Equity Under Spotlight", *The Australian Financial Review*, 30 March 2007.

DeAngelo, H., L. DeAngelo, E. Rice, 1984a, Going Private: The effects of a change in corporate ownership structure, *Midland Corporate Finance Journal* (Summer), 35–43.

DeAngelo, H., L. DeAngelo, and E. Rice. 1984b, Going private: Minority freezeouts and stockholder wealth, *Journal of Law and Economics* 27, 367–402.

Denis, D., 1990, Defensive changes in payout policy: Share repurchases and special dividend, Journal of Finance 1, 1433-1456.

Dess, Gregory G., Anil Gupta, Jean-Francois Hennart & Charles W.L. Hill. 1995. Conducting and integrating strategy research at the international, corporate, and business levels: Issues and directions. *Journal of Management,* 21(3): 357-393.

Eddey, P. H., K. W. Lee, S. L. Taylor, 1996, What motivates going private? An analysis of Australian firms, *Accounting and Finance* 36, 31-50.

Enright, M.J. and Mak, V., 2003, Financial crisis and firm performance, Harvard Business Review.

Eureka Private Equity: http://www.eurekaprivateequity.com/All_News.asp?id=11205

Financial Times Megazine, March Issue, 2010.

Georges, D., 2009, Structured finance, risk management, and the recent financial crisis, Working paper, Centre Interuniversitaire sur le Rsque, Les Politiques economiques et l'Emploi.

Gleason, K., B. Payne, J. Wiggenhorn, 2007, An empirical Investigation of going private decisions of U.S. firms, *Journal of Economics and Finance* 31(2), 207-218.

Grossman, S.J., O. D. Hart, 1980, Take-over bids, the free-rider problem and the theory of the corporation, *Bell Journal of Economics* 11, 42–64.

Halpern, P., R. Kieschnick, W. Rotenberg, 1999, On the heterogeneity of leveraged going private transactions, *Review of Financial Studies* 12, 281-309.

Jansen, K., S. Kleimer, 2003, Motives for going private in Germany, Life Working paper 03-016, Department of Finance, Maastricht University, July.

Jensen, M. C., 1986, Agency costs of free-cash-flow, corporate finance, and takeovers, *American Economic Review* 76, 323–329.

Jensen, M. C., W. Meckling, 1976, Theory of the firm: managerial behavior, agency costs and ownership structure, *Journal of Financial Economics* 3, 305–360.

Kaplan, S. N., 1989a, The effects of management buyouts on operating performance and value, *Journal of Financial Economics* 24, 217–254.

Kaplan, S. N., 1989b, Management buyouts: Evidence on taxes as a source of value, *Journal of Finance* 44(3), 611–632.

Kim, W. C., P. Hwang & W. P. Burgers. 1989. Global diversification strategy and corporate profit performance. Strategic Management Journal, 10:45-47.

Kim, Woojin and Michael Weisbach, 2006, Motivations for public equity offers: An international perspective, *Journal of Financial Economics* 87, p281-307.

Krzysztof, J. and Kowalewski, O., 2006, Why do companies go private in emerging markets? Evidence from Poland.

Lee, K. and Kwok C.Y., 1988, 'Multinational Corporations vs. Domestic Corporations: International Environmental Factors and Determinants of Capital Structure', *Journal of International Business Studies*, 19, pp. 195-217.

Lehn, K., A. Poulsen, 1989, Free cash flow and stockholder gains in going private transactions, *Journal of Finance* 44, 771–787.

Leland, H., D. Pyle, 1977, Information asymmetries, financial structure, and financial intermediation, *Journal of Finance* 32, 371-387.

Ramsay, I. M., H. Lange, and L. A. Woo, 2000, Corporate governance and anti-takeover devices, Working paper, University of Melbourne.

Maksimovic, V., and P. Pichler. 2001. Technological Innovation and Initial Public Offerings. *The Review of Financial Studies* 14:459–94.

Mangos, Nicholas, Peter W. OBrien & Richard Damania. 2002. Is the interaction of international diversification and economic performance a linear relationship? *JANZAM*, 8(1): 21-31.

Merton, R. C., 1987, A simple model of capital market equilibrium with incomplete information, *Journal of Finance* 42(3), 483–510.

Modigliani, F., and M. Miller. 1963. Corporate Income Taxes and the Cost of Capital: A Correction. *American Economic Review* 53:433–43.

Murphy, K. J., 1985, Corporate performance and managerial remuneration: an empirical analysis, *Journal of Accounting and Economics* 7, 11–42.

Myers, S., N. Majluf, 1984, Financing decision when firms have investment information that investors do not, *Journal of Financial Economics*, 187-220.

Newell, R., 2006, Asia-Pacific private equity investment and communications solutions: http://www.richardnewell.com/articles/Asia-Pacific-Private-Equity.htm

Opler, T., S, Titman, 1993, The determinants of leveraged buyout activity: Free cash flow vs. financial distress costs, *Journal of Finance* 48(5), 1985–1999.

Private Equity Tax (Connected thinking) – Asia Pacific, Price Waterhouse and Coopers, 2010.

Rao, S. M., M. S. Waters, B. Payne, 1995, Going private: a financial profile, *Journal of Financial and Strategic Decisions* 8(3), 314-329.

Ramsey, F. and D. Schafer, 2002, The statistical sleuth: A course in methods of data analysis, 2nd edition, Thomson Learning, Duxbury.

Reeb, D.M., Chuck C.Y. Kwok H. Baek, Y., 1998, Systematic risk of the multinational corporation. *Journal of International Business Studies*, 29(2): 263-280.

Renneboog, L., T. Simons, 2005, Public to private transactions: LBOs, MBOs, MBIs and IBOs, Working paper, European Corporate Governance Institute and Tilburg University.

Renneboog, L., T. Simons, M. Wright, Why do public firms go private in the UK? The impact of private equity investors, incentive realignment and undervaluation, *Journal of Corporate Finance* 13, 591-628.

Reserve Bank of Australia (2007) "The Private Equity Market in Australia", Financial Stability Review, March 2007 p 59)

Ritter, R. J. 1987. The Costs of Going Public. *Journal of Financial Economics* 19(2):269–81.

Scott, J. H. 1976. A Theory of Optimal Capital Structure. *Bell Journal of Economics* 7:33–54.

Smith, A., 1990, Corporate ownership structure and performance: the case of management buy-outs, Journal of Financial Economics 27, 143–164.

Subrahmanyam, A., S. Titman, 1999, The going-public decision and the development of financial markets, Journal of Finance 54, 1045–1082.

Yosha, O. 1995. Information Disclosure Costs and the Choice of Financing Source. *Journal of Financial Intermediation* 4:3–24.

Warga, A., I. Welch, 1993, Bondholder losses in leveraged buyouts, The Review of Financial Studies 6, 959–982.

White, Halbert (1980), "A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity", Econometrica 48 (4): 817–838

Wright, M., Hoskisson, R., Busenitz, L and Dial, J. 2000, 'Entrepreneurial Growth through Privatization: The Upside of Management Buy-outs', *Academy of Management Review*, Vol. 25, pp. 591-601.

Appendix A

Panel A: Firms Going Private

	[1]	*[2]*	*[3]*	*[4]*	*[5]*	*[9]*	*[10]*	*[11]*	*[12]*	*[13]*	*[14]*	*[15]*	*[16]*	*[17]*	*[18]*	*[19]*	*[20]*
TOP_20 [1]	1.00																
INT_SEG [2]	0.14	1.00															
BUS_SEG [3]	0.01	0.07	1.00														
LIQUIDITY [4]	-0.03	0.35	0.02	1.00													
DPN_EXPNSE [5]	0.03	-0.01	-0.05	0.17	1.00												
DEBT_TD [9]	0.04	0.14	0.16	0.03	0.33	1.00											
DIV [10]	-0.17	0.22	0.03	0.12	-0.05	-0.09	1.00										
CASH [11]	0.07	-0.23	-0.15	-0.16	0.00	-0.41	-0.19	1.00									
FCF [12]	-0.08	0.10	-0.04	0.09	0.21	0.13	0.03	0.01	1.00								
ANALYST [13]	0.13	-0.13	0.08	-0.24	-0.02	0.02	-0.11	-0.04	-0.10	1.00							
GROWTH [14]	-0.08	-0.15	0.05	-0.21	0.04	-0.05	0.02	0.06	-0.08	0.06	1.00						
PE [15]	0.03	-0.10	-0.09	-0.02	-0.11	-0.08	-0.04	0.23	0.12	0.10	0.01	1.00					
PROF [16]	0.04	0.15	-0.02	0.12	-0.08	-0.05	0.24	0.03	0.16	-0.20	-0.03	0.06	1.00				
SIZE [17]	0.02	0.24	0.25	0.34	0.07	0.36	0.19	-0.62	-0.09	-0.13	-0.13	-0.28	0.16	1.00			
TAX [18]	-0.18	-0.01	0.03	0.02	-0.01	-0.02	0.02	0.02	0.27	0.20	-0.01	0.05	0.01	-0.11	1.00		
RD [19]	0.02	-0.10	-0.12	0.10	-0.01	-0.13	-0.09	0.28	-0.23	-0.01	-0.10	0.49	0.02	-0.31	-0.09	1.00	
PRIOR_TAKEOVER [20]	0.01	0.08	0.13	0.16	-0.05	0.04	0.13	0.07	-0.02	0.02	-0.33	-0.11	0.14	0.04	0.03	0.04	1.00
INSIDE [21]	0.52	0.03	0.12	0.08	0.15	0.14	0.21	0.22	0.16	0.14	0.13	-0.06	0.29	0.19	-0.09	-0.08	0.23

Panel B: Controlled Firms

	[1]	*[2]*	*[3]*	*[4]*	*[5]*	*[9]*	*[10]*	*[11]*	*[12]*	*[13]*	*[14]*	*[15]*	*[16]*	*[17]*	*[18]*	*[19]*
TOP_20 [1]	1.00															
INT_SEG [2]	0.02	1.00														
BUS_SEG [3]	-0.22	0.09	1.00													
LIQUIDITY [4]	-0.05	0.26	0.12	1.00												
DPN_EXPNSE [5]	0.02	0.35	0.03	0.30	1.00											
DEBT_TD [9]	0.19	0.04	0.06	0.03	0.20	1.00										

DIV [10]	-0.10	-0.04	0.02	0.07	-0.04	0.09	1.00										
CASH [11]	-0.16	-0.12	-0.02	-0.21	-0.22	-0.30	0.01	1.00									
FCF [12]	0.05	0.09	-0.26	-0.02	-0.01	0.15	0.12	-0.34	1.00								
ANALYST [13]	-0.03	0.01	0.25	0.18	-0.12	0.04	-0.03	-0.01	0.01	1.00							
GROWTH [14]	-0.03	-0.37	-0.05	-0.25	-0.07	-0.09	-0.04	0.04	-0.05	-0.13	1.00						
PE [15]	-0.08	0.02	-0.14	-0.11	-0.07	-0.01	-0.02	-0.08	0.00	-0.06	0.03	1.00					
PROF [16]	-0.11	0.04	-0.07	-0.03	0.00	0.06	0.12	-0.01	0.28	0.18	0.03	0.10	1.00				
SIZE [17]	-0.19	0.32	0.40	0.44	0.20	0.09	0.28	-0.16	0.16	0.13	-0.32	-0.22	0.09	1.00			
TAX [18]	0.02	-0.10	0.03	0.05	-0.13	0.13	0.15	-0.09	0.06	0.08	-0.05	0.00	0.11	0.20	1.00		
RD [19]	-0.01	-0.05	-0.05	-0.01	0.05	-0.02	-0.17	0.29	-0.33	0.09	0.04	0.03	0.00	-0.34	-0.13	1.00	
PRIOR_TAKEOVER [20]	0.17	-0.07	0.19	0.01	-0.14	0.17	0.07	-0.04	-0.22	0.02	-0.03	0.13	-0.07	-0.01	0.05	-0.01	1.00
INSIDE [21]	0.49	0.03	0.09	0.10	0.17	0.12	0.22	0.16	0.14	0.19	0.10	-0.07	0.23	0.13	-0.05	-0.06	0.12

This table reports correlation matrix of independent variables. Panel A shows correlation matrix of firms that went private and Panel B presents correlation matrix of controlled firms. Independent variables: Top 20 shareholdings/Total (adjusted) ordinary shares (TOP_20). Ln (number of countries a firm has its segments) (INT_SEG). Ln (total number of business segment) (BUS_SEG), Ratio of daily turnover volume over the past 12 months (TURNOVER). Total depreciation expense/Total assets (DPN_EXPENSE). Z-Score = A * 3.3 + B * 0.99 + C * 0.6 + D * 1.2 + E * 1.4 (ALTMAN). Ln(total years since the year of IPO) (AGE). Fixed assets/Total assets (CVA). Long term+ short term debt)/Total assets (DEBT_TD). 1 if a firm paid out dividends during the fiscal year, 0 otherwise (DIV). (OIBIT+DEP+AMO-TAXP-DIVP)/Total assets (FCF). Ln(number of analysts following the firm in any fiscal year (set to '0' if missing)) (ANALYST). Market to book value (GROWTH). Price to earnings ratio (PE). Net income/Total assets (PROF). Ln(Total revenue) (SIZE). Income tax expense attributable to operating income/operating income before tax (TAX). Research and Development expense/sales (RD). 1 if a takeover bid was made in preceding 12 months, '0' otherwise (FOOTSTEP). Beneficial interest attributable to board of director's/Total ordinary shares (INSIDE). 1 if a given year has experienced financial crisis, '0' otherwise (CRISIS). Target company's book value per share (TARGETBVPS). Ln(Target company's equity value) (TGT_EQTYVALUE). Ln(Target company's entity value) (TGT_ENTVLU). Transaction costs/total assets (TGT_TRSAC). % sought in firm (PERCENT_SOUGHT). 1 if bidder is from overseas, '0' otherwise (FORGN_INVEST). 1 if acquisition technique is leverage buyout, '0' otherwise (ACQ_LBO). 1 if acquisition technique is management buyout, '0' otherwise (ACQ_MBO). 1 if a firm belong to a certain industry group, '0' otherwise (INDUS).