

# The Determinants of Merger Withdrawals' Abnormal Returns in The Australian Market

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## **Abstract**

*This paper examines the abnormal returns in merger withdrawals in Australia, especially distinguishing the market response between private and public targets. We also study the determinants of those abnormal returns, including the method of payment and the impact of financial crisis periods. Using the event study method, we document that in the Australian context, the announced withdrawal of mergers involving private targets creates significantly negative valuation effects in comparison with the valuation effects in withdrawal of mergers involving public targets. We also find that a financial crisis period strongly affects abnormal returns of merger withdrawals. However, the method of payment does not have any impact on the abnormal returns.*

**Keywords:** Abnormal return; Australian firms; M&A; withdrawals.

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## 1. Introduction

The phenomenon of mergers and acquisitions has developed to become a highly popular form of corporate development to create growth and diversity (Cartwright and Schoenberg, 2006). Merger and acquisition are a vital part of both healthy and weak economies and are often the primary way in which companies are able to provide returns to their investors, stakeholders, and owners (Sherman, 2010).

However, in general, out of ten proposals for a merger in the Australian Stock Exchange, one of them will be withdrawn. In the world as a whole, proposals that are withdrawn constitute a ratio of one in twenty<sup>1</sup>. Because of the large proportion in the population of total merger proposals, the withdrawn merger proposals should account for an important part of academic research in the merger and acquisition field and also in real life business practices. A withdrawn proposal is intriguing as it can reverse previous effects caused by the results from the announcement of the proposal. We expect that the effects of a withdrawn proposal on the valuation of firm value would be very important, even surpassing the importance of announcement effects. However, the fact is that many researchers have been focusing on examining the effects of the announcement of a proposal, but not many of them pay proper attention to the effects of a withdrawn merger proposal.

In consideration of research in the merger and acquisition field, it is widely known that the effects of an announcement of a proposal from a public bidder can vary in many characteristics, such as those of bidders, targets, market, and from the proposal itself. Therefore,

it would be expected that the signal resulting from a withdrawn proposal would also be affected by the above attributes. A withdrawn merger proposal requires more thorough and more attentive dedication in examining what influences its variations.

In particular, there is an important research gap, which is the valuation of a bidder in response to a merger bid that may be conditioned on whether its corresponding target is a privately-held or a publicly-traded company. The effect caused by whether the target is a public or private company in firm valuation is expected to be significant since private and public targets are inherently different. Moreover, acquirers will have different ownership implications for a takeover strategy for private targets versus those for public targets. In other words, the signal relayed from the withdrawal of merger bids for private targets may be different in comparison with those of their public counterparts. Previous literature generally ignored merger proposals involving private targets or did not put proper attention to this unique characteristic. This paper aims to fill the gap by examining whether the firm status affects firm value during mergers and acquisitions.

Researching the effect of firm status on merger deal abnormal returns is important for both academics and business practitioners. For academic researchers, this study looks into a new corner of the merger and acquisition field, which is withdrawals involving private targets, which helps to enrich the theoretical framework and might offer opportunity for further exploration. One aspect of information asymmetry, which is represented by whether the firm status is public or private, is further ex-

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amined through the effect of withdrawn merger proposals. In addition, the effects of other characteristics previously pointed out by other researchers that affect firm valuation in a deal are now more strengthened with evidence from this study. In practical business life, the implications from this study can provide insights and useful knowledge for investors and merger consultants. Investors can have a better approach to understanding how valuation of a public firm is different from a private one in a deal. Based on this, they can offer a fair price between target and bidder, this being one of the crucial factors contributing to the success of a deal. In addition, to the authors' knowledge, no study has examined the topic of withdrawals of mergers involving private targets in an Asian countries' context. Realizing the lack of empirical evidence in the Asian context, the objective of this study is to examine how firm status and other control variables impact firm valuation from withdrawn merger proposals for selected listed companies on the Australian Stock Exchange.

## **2. Literature review and hypotheses**

### ***2.1. Literature review***

Empirical evidence on the topic of withdrawals of mergers is mainly in the US context. In his research, Dodd (1980) finds that regardless of whether the proposal is successful or cancelled, stockholders of target firms earn positive abnormal returns from the announcement of merger proposals. For merger proposals that are eventually cancelled, on average, stockholders of target firms earn significant negative abnormal returns on the date of the announcement of the termination of negotiations. As for the side of stockholders of bidder firms, in both

successful and withdrawn merger proposals, there is evidence of negative abnormal returns for bidders over the duration of the proposals.

Asquith (1983) and Bradley et al. (1983) examine abnormal stock returns throughout the entire merger process for both successful and unsuccessful merger proposals. They point out that increases in the probability of a successful merger bid benefit the stockholders of target firms, and that increases in the probability of merger withdrawal negatively affects both target and bidder's stockholders. There is also evidence that the stock market forecasts probable merger targets in advance of the merger announcement, therefore, previous studies have underestimated the market's reaction to merger bids.

With regard to method of payment, Chang and Suk (1988) find that on average, in the US context, acquirers that offer common stock, experience a positive abnormal return. On the contrary, this observation is not clearly seen when firms offer cash. In other words, the withdrawals of merger transactions that were financed with stock result in positive and significant valuation effects for bidders. The results are not significant when cash or mixed financing was planned.

However, there are conflicts in this issue in the current literature. Sullivan et al. (1994) find that the valuation effect of the acquirer is insignificant, regardless of whether the intended method of payment was stock or cash. Davidson et al. (1989) find that the valuation effect of the acquirer is negative and significant at the time of the withdrawal.

Moreover, as suggested by Fuller et al. (2002), private targets are likely to be sold at

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a discount in comparison with public targets to compensate for their lack of liquidity. Private targets do not enjoy the benefits of publicly-trading as public targets; therefore, the ownership of a private target is not easily transferable as is a public one. The lack of liquidity helps a bidder to purchase the target firm at a lower price to remove the disadvantage of liquidity deficiency once the target is under the ownership of the bidder. Private targets are also different from public targets because they are not required to disclose public information. This makes the targets less attractive, as their financial information and their intention for a merger is not available, hence, they might be ignored by many prospective bidders. Even when a bidder makes the effort to pursue a private target, there is substantial information asymmetry which would make the valuation of the target firm become harder, leading to the demand of a discount for bidder price (Officer et al., 2009).

The interpretation of a withdrawn merger bid is different when involving private targets. For merger transactions that were financed with stock, Madura and Ngo (2012) state that the use of stock to acquire a private target relays a favorable signal. Consequently the termination of that merger may eliminate that favorable signal and result in a negative withdrawn abnormal return. This contends that the method of payment signals the intrinsic value of bidders to the market, because the bidder with the intrinsic value information may choose the payment method benefiting the bidders. This hypothesis was supported by Jensen and Meckling (1976) and Myer and Majluf (1984).

A merger can significantly impact the bor-

rowing capacity of the bidder because it demands the bidder raise significant funds to purchase the target (Galai and Masulis, 1976; Travlos, 1987). Furthermore, when there is a strong competition, and in this particular scenario, there are multiple bidders, the withdrawal of a bidder may prevent them from overpaying for the target. Therefore, the event of a withdrawal is acceptable for the market as this action serves shareholder interest by avoiding wealth transferring from bidder to target. As an explanation for this, Walkling and Edminster (1985) argue that bidders tend to suffer hubris and offer a too high premium to pay to the targets to avoid losing the deals to other bidders. The withdrawal by a bidder may be viewed favorably to the extent of avoiding overpayment, holding other factors constant. However, the impact of multiple bidders is controversial as Schipper and Thompson's results (1983) indicate that it is difficult to identify the market's perception of an individual acquisition when firms make multiple bids, as part of an announced acquisition program.

According to Morck et al. (1990), mergers of unrelated targets tend to be overpaid and do not serve shareholder interests. There are three reasons that explain why managers might overpay for unrelated targets. First, if managers are not properly diversified themselves, they would diversify their firms to reduce the risk of human capital even when diversification offers few if any benefits to shareholders (Amihud and Lev, 1981). Second, to assure survival and continuity of the firm when shareholder wealth maximization dictates shrinkage or liquidation, managers try to enter new line of business (Donaldson and Lorsch, 1983). Third,

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when poor performance of the firm threatens a manager's job, he has an incentive to enter new businesses, in which he can be better in terms of performance (Shleifer and Vishny, 1991).

## **2.2. Hypotheses**

### *Hypothesis about wealth destruction of withdrawn mergers*

To the extent that the bidder experiences a valuation gain in response to an announced merger bid, the gain will be reversed if the bid is withdrawn. The withdrawal of the merger eliminates the possible benefits of the bidder from purchasing a private target at a discounted price, which is lower than its actual value. Thus, we expect negative valuation effects in response to withdrawn merger bids involving private targets.

**Hypothesis 1:** A bid involving private targets has negative valuation effects in response to a withdrawn merger.

### *Hypotheses explaining the wealth destruction of withdrawn mergers*

As the use of stock in a deal of a private target experiences positive returns, the withdrawals of those deals will reverse that favorable signal. We would anticipate that for proposed mergers that are supported with stock, the valuation effects are worse for private targets than public targets.

**Hypothesis 2:** If stock is the intended method of payment, it will have a negative correlation with firm valuation on the effects of withdrawn mergers of private targets

For a bidder who already has a low cash level, we might expect a decision for a withdrawn merger is due to cash unavailability. The withdrawal decision will serve shareholder inter-

est by avoiding pushing bidder cash capacity; therefore, the withdrawn abnormal return will not be negatively impacted. Conversely, if the cash level is already high and the withdrawal decision cannot be explained by bidder's affordability, we expect a negative correlation with withdrawn merger cumulative abnormal return to reverse the positive impact that has been caused by the announcement of the proposal.

**Hypothesis 3:** A bidder's cash level has negative valuation effects on the bidder's withdrawals of mergers of private targets

A high leverage level is a major concern for a bidder when choosing whether or not to proceed with a deal; therefore, for firms that already have high debts, the market is more acceptable for the withdrawal of the merger. Conversely, bidders with a low debt level do not have sympathy from the market for this reason. Therefore, we might expect that high debt leverage would have positive effects on withdrawn abnormal returns.

**Hypothesis 4:** A bidder's debt level has positive valuation effects on the bidder's withdrawals of mergers of private targets

The announcement of a merger and the withdrawal of that merger are two opposite events, hence a withdrawal of a merger should reverse the benefits or losses which have been generated by the announcement of that merger. Therefore, the bidder's valuation effect at the time of the withdrawal announcement should be inversely related to the bidder's previous bid announcement effect. For this reason, we might expect a negative correlation between an announced merger abnormal return and a withdrawn merger abnormal return.

**Hypothesis 5:** An announced abnormal return has negative valuation effects on withdrawn mergers of private targets.

### 3. Methods

#### 3.1. Estimation of valuation effects

In order to examine if there are any distinctive differences between firm status and its effects on withdrawals of mergers, we compare cumulative abnormal returns of two sub-samples: one includes withdrawals involving public companies only and the other involves private companies only.

We use the market index for all ordinary shares of the Australian Stock Exchange as the market benchmark for the estimation of valuation effects due to withdrawn merger proposals. We apply the standard event study method with the estimation period applied in the calculation is the (-250,-50) day window prior to the withdrawal date. The valuation effects are estimated for several event windows such as (0,+1), (-1,+2), and (-1,+1) days around the withdrawal date.

#### 3.2. Research models

In order to identify the characteristics that influence the cumulative abnormal returns that are generated by the withdrawn events, we employ OLS regression models. To test whether our hypothesized characteristics affect the cumulative abnormal returns, we apply the following models:

##### *Model 1: Full model*

$$\text{WITHCAR}_i = \beta_0 + \beta_1 \text{PRIV}_i + \beta_2 \text{PRIVSTOCK}_i + \beta_3 \text{BIDDERCASH}_i + \beta_4 \text{ANNCAR}_i + \beta_5 \text{BIDDERDEBT}_i + \beta_6 \text{MULTIBID}_i + \beta_7 \text{RELATED}_i + \beta_8 \text{RESIZE}_i + \beta_9 \text{FINCRISIS}_i + \beta_{10} \text{ROA}_i + u_i$$

In which:

The dependent variable WITHCAR is the Cumulative Abnormal Returns (CAR) to the bidders in the (0,+1) days around the announcement of the withdrawal date of the merger.

The independent variables are as follows:

- PRIV is set equal to 1 if the target is private, and 0 otherwise. A negative and significant coefficient of PRIV would support our hypothesis that valuation effects of withdrawn mergers are worse when they involve private targets than public targets.

- PRIVSTOCK is assigned a value of 1 when the proposed merger involves a private target and at the same time is to be financed with stock and 0 otherwise. A negative and significant coefficient of PRIVSTOCK would suggest that for proposed mergers that are supported with stock, the valuation effects are worse when they involve private targets than public targets.

- BIDDERCASH is measured as the ratio of an acquirer's cash level over total assets

- BIDDERDEBT is measured as the ratio of an acquirer's total debt over total assets

- ANNCAR: is the cumulative abnormal return during the (0,+1) period at the time of the initial merger bid announcement.

The control variables are:

- MULTIBID takes a value of 1 if there are multiple bidders, and 0 otherwise.

- RELATED is a dummy variable, equal to 1 for mergers by parties of the same two-digit Standard Industrial Classification (SIC) codes, and 0 otherwise.

- RESIZE is the relative size of total assets

of an acquirer over the target.

- FINCRISIS is assigned a value of 1 when the time of proposed merger is from 2007 to 2010, and 0 otherwise.

- ROA is return on assets of the bidder.

To the extent that the initial bid effect (ANNCAR) is related to the other characteristics that may affect the bidder's valuation effect at the time of withdrawal, such as BIDDERCASH and BIDDERDEBT, we would like to apply as an alternative some reduced-form models that exclude some of the characteristics that may result in multicollinearity. Five reduced-form models that we use in this study are below:

*Model 2: This is the most reduced-form model where no control variable is included.*

$$\text{WITHCAR}_i = \beta_0 + \beta_1 \text{PRIV}_i + \beta_2 \text{PRIVSTOCK}_i + \beta_3 \text{MULTIBID}_i + \beta_4 \text{RELATED}_i + \beta_5 \text{FINCRISIS}_i + u_i$$

*Model 3: Reduced-form model*

$$\text{WITHCAR}_i = \beta_0 + \beta_1 \text{PRIV}_i + \beta_2 \text{PRIVSTOCK}_i + \beta_3 \text{ANNCAR}_i + \beta_4 \text{MULTIBID}_i + \beta_5 \text{RELATED}_i + \beta_6 \text{RESIZE}_i + \beta_7 \text{FINCRISIS}_i + \beta_8 \text{ROA}_i + u_i$$

*Model 4: Reduced-form model*

$$\text{WITHCAR}_i = \beta_0 + \beta_1 \text{PRIV}_i + \beta_2 \text{PRIVSTOCK}_i + \beta_3 \text{BIDDERCASH}_i + \beta_4 \text{BIDDERDEBT}_i + \beta_5 \text{MULTIBID}_i + \beta_6 \text{RELATED}_i + \beta_7 \text{RESIZE}_i + \beta_8 \text{FINCRISIS}_i + \beta_9 \text{ROA}_i + u_i$$

*Model 5: Reduced-form model*

$$\text{WITHCAR}_i = \beta_0 + \beta_1 \text{PRIV}_i + \beta_2 \text{PRIVSTOCK}_i + \beta_3 \text{ANNCAR}_i + \beta_4 \text{BIDDERDEBT}_i + \beta_5 \text{MULTIBID}_i + \beta_6 \text{RELATED}_i + \beta_7 \text{RESIZE}_i + \beta_8 \text{FINCRISIS}_i + \beta_9 \text{ROA}_i + u_i$$

*Model 6: Reduced-form model*

$$\text{WITHCAR}_i = \beta_0 + \beta_1 \text{PRIV}_i + \beta_2 \text{PRIVSTOCK}_i + \beta_3 \text{BIDDERCASH}_i + \beta_4 \text{ANNCAR}_i + \beta_5 \text{MULTI-}$$

$$\text{BID}_i + \beta_6 \text{RELATED}_i + \beta_7 \text{RESIZE}_i + \beta_8 \text{FINCRISIS}_i + \beta_9 \text{ROA}_i + u_i$$

For reduced-form models 3, 4, 5 and 6, in order to examine the possibility of multicollinearity, the variables ANNCAR, BIDDERCASH and BIDDERDEBT are one by one dropped out.

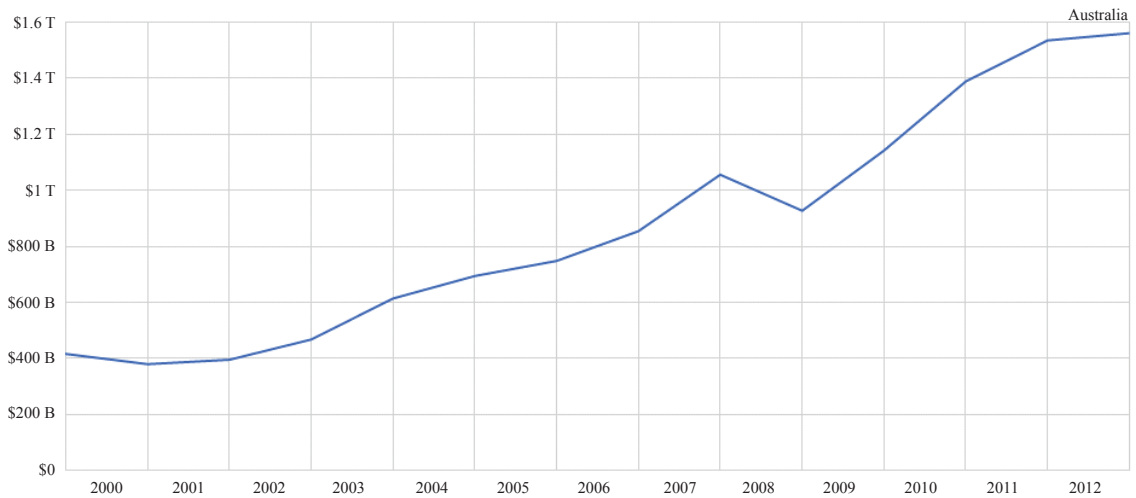
### 3.3. Data

#### 3.3.1. Sample selection

The withdrawn merger observations are taken from the Thomson Financial SDC Platinum™ database. The SDC Platinum™ database is the industry standard for information on new issues, M&A, syndicated loans, private equity, project finance, poison pills, and more. The market index benchmark is the market index for all ordinary shares of the Australia Stock Exchange taken from Yahoo Finance. This index is available in Yahoo Finance with the symbol ^AORD and is available for the whole research period time, from 2003 to 2012. Historical stock prices of the sample firms are taken from Morningstar® DatAnalysis Premium Database. Morningstar® DatAnalysis Premium Database is a trustworthy and reliable database, which delivers a comprehensive current and historical picture of Australian Stock Exchange listed and delisted companies. Its extensive corporate data dates back to 1998.

First, via the Thomson Financial SDC Platinum™ database, we identify all mergers that satisfy these criteria: (1) acquirers are listed companies; (2) the proposal announcements were made in the 2003 to 2012 period in the Australia Stock Exchange; (3) the merger status is withdrawn; and (4) target firm status is either public or private, not subsidiaries, joint ventures, or government-owned. Second, we

**Figure 1: Gross domestic product of Australia (in US Dollars)**



Source: World Bank

collect historical stock prices of acquirers in the samples. Only those observations that satisfy the requirement of having enough data points to calculate an abnormal return for the event window (-250, +3) are retained. After the

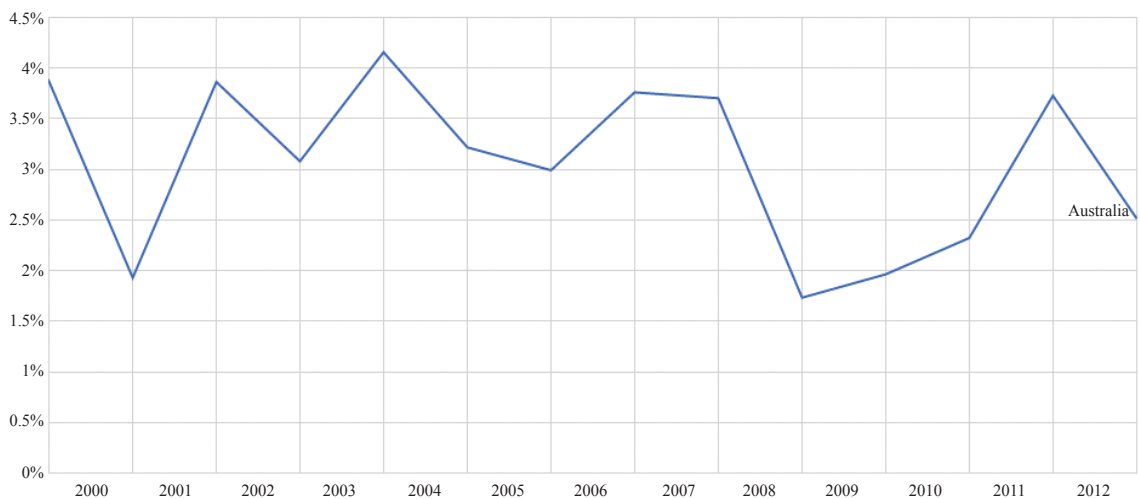
above process, there are 68 observations satisfying the requirements.

### 3.3.2. Descriptive statistics

#### An overview on Australia's economy

As reported by Credit Suisse Global Wealth

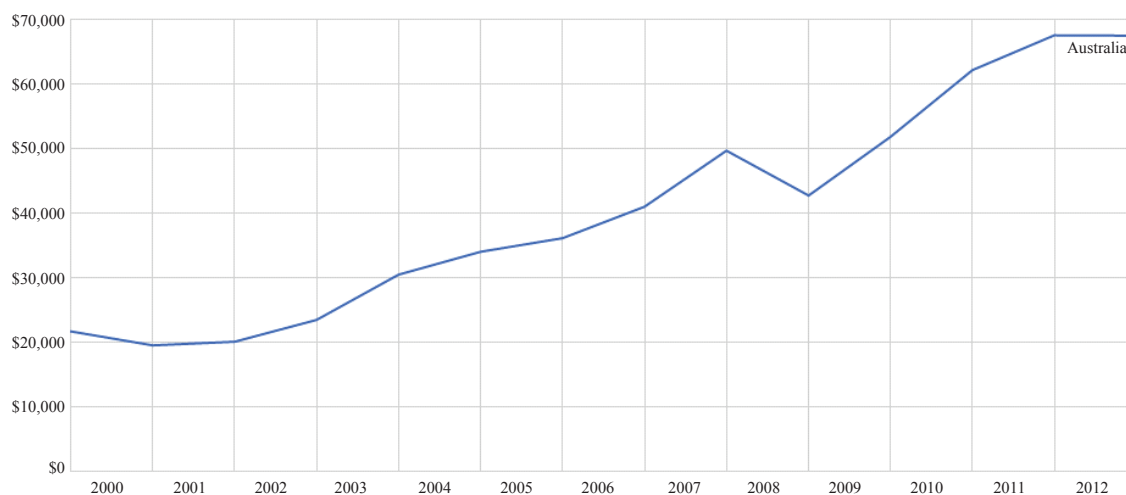
**Figure 2: GDP growth rate of Australia (percentage)**



Source: World Bank



**Figure 3: GDP per capita of Australia (in US Dollar)**



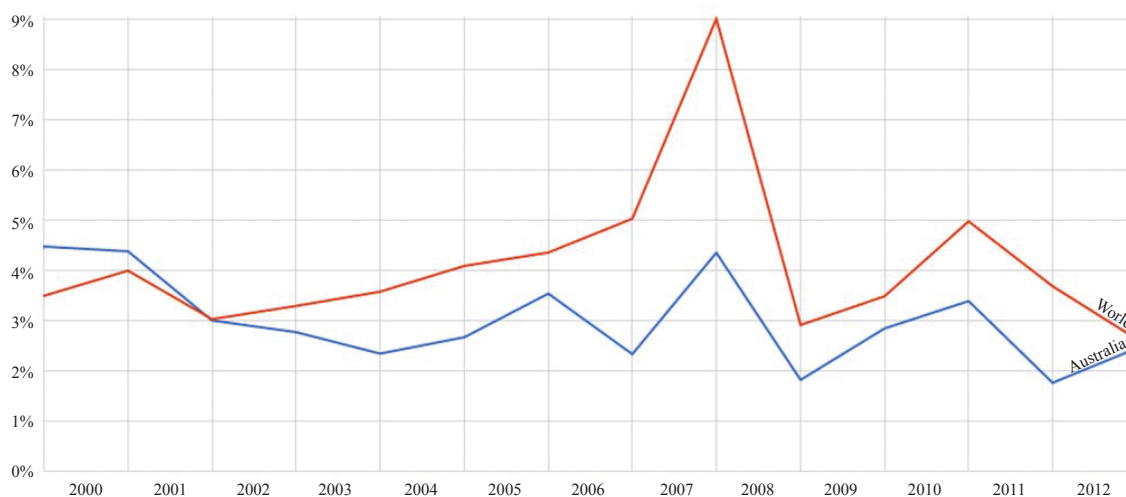
Source: World Bank

Report, the economy of Australia is one of the largest mixed market economies in the world, with a GDP of US\$1.525 trillion as of 2014. In 2012, Australia was the 12<sup>th</sup> largest national economy by nominal GDP and the 17<sup>th</sup>-largest

measured by PPP-adjusted GDP, about 1.7% of the world economy. Australia is the 19<sup>th</sup>-largest importer and 19<sup>th</sup>-largest exporter in the world.

According to the World Factbook<sup>2</sup>, the Aus-

**Figure 4: World inflation rate versus Australia inflation rate (percentage)**



Source: World Bank

**Table 1: Key foreign investment in Australia by region/areas of origin (A\$ millions)**

Region/Area	2009	2010	2011	2012
APEC	100,269	78,805	58,518	61,388
ASEAN	-9,821	4,077	2,049	2,803
EU	44,474	-38,871	-35,289	-21,360
OECD	148,977	42,379	8,046	35,482

Source: Australian Bureau of Statistics

**Table 2: Statistical descriptions of variables**

	<i>WITH CAR (-2,1)</i>	<i>ANN CAR (-2,1)</i>	<i>WITH CAR (-1,1)</i>	<i>ANN CAR (-1,1)</i>	<i>WITH CAR (0,1)</i>	<i>ANN CAR (0,1)</i>
Mean	-0.023	0.059	-0.022	0.030	-0.009	0.032
Standard Error	0.021	0.048	0.019	0.021	0.015	0.020
Median	-0.004	-0.006	-0.001	-0.012	-0.006	-0.010
Minimum	-0.102	-0.095	-0.112	-0.107	-0.112	-0.097
Maximum	0.115	0.121	0.109	0.103	0.105	0.106
No. of obs	68	68	68	68	68	68
	<i>PRIV</i>	<i>PRIVSTOCK</i>	<i>MULTIBID</i>	<i>RELATED</i>	<i>FINCRISIS</i>	
Mean	0.191	0.118	0.235	0.662	0.603	
Standard Error	0.048	0.039	0.052	0.058	0.060	
Median	0.000	0.000	0.000	1.000	1.000	
Minimum	0.000	0.000	0.000	0.000	0.000	
Maximum	1.000	1.000	1.000	1.000	1.000	
No. of obs	68	68	68	68	68	
	<i>ROA</i>	<i>RESIZE</i>	<i>BIDDERCASH</i>	<i>BIDDERDEBT</i>		
Mean	-0.274	5.836	0.182	0.460		
Standard Error	0.104	1.228	0.023	0.330		
Median	0.016	3.003	0.181	0.231		
Minimum	-0.545	0.348	0.003	0.029		
Maximum	0.363	39.268	0.299	1.642		
No. of obs	68	68	68	68		

**Table 3: Sample description**

<b>Panel A - Sample distribution by year</b>				
Year	By merger proposal announcement date		By merger proposal withdrawal date	
	No. of public targets	No. of private targets	No. of public targets	No. of private targets
2003	3	2003	2003	0
2004	3	2004	2004	0
2005	4	2005	2005	1
2006	6	2006	2006	2
2007	7	2007	2007	3
2008	12	2008	2008	4
2009	10	2009	2009	0
2010	7	2010	2010	1
2011	1	2011	2011	5
2012	2	2012	2012	0
Total	55			13
<b>Panel B - Sample distribution by other characteristics</b>				
<i>Intended method of payment</i>				
	No. of public targets		No. of private targets	
Cash-out	13		2	
Stock	34		8	
Hybrid	8		3	
Total	55		13	
<i>Multiple bidders</i>				
	No. of public targets		No. of private targets	
Yes	39		0	
No	16		13	
Total	55		13	
<i>Financial crisis</i>				
	No. of public targets		No. of private targets	
Yes	36		5	
No	19		8	
Total	55		13	

tralian economy has experienced continuous growth and features low unemployment, contained inflation, very low public debt, and a

strong and stable financial system. By 2014, Australia had experienced more than 20 years of continued economic growth, averaging more

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than 3% a year.

Australia is ranked 19<sup>th</sup> in the world for GDP per capita (PPP) in 2014, according to IMF (World Economic Outlook Database 2015). Australia's sovereign credit rating is "AAA", higher than the United States of America.

Inflation has typically been 2 to 3% and the base interest rate 5 to 6%. In general, the inflation rate in Australia is lower in comparison with the world average, as reported in Figure 4. Even in the period 2007 to 2008, when the world had an inflation rate of as high as 9%, the inflation rate of Australia still remained at a high of just over 4%. The stable inflation rate of Australia is an ideal condition for attracting investors and for developing economics.

Australia is one of the world's leading destinations for foreign direct investment (FDI), with total FDI stock growing 6.6 per cent to reach a record AU\$507 billion in 2011, as reported by the Hellenic-Australian Business Council. This growth reflects the upturn in global FDI activity since 2010 and Australia's strong competitive position in the global economy.

The country's robust economy, strategic location, strong global trade and investment ties, and proven track record of innovation position Australia as an ideal investment destination; Australia ranks amongst the top 10 in those projects highlighted by FDI Intelligence and A.T. Kearney's 2012 FDI Confidence Index<sup>3</sup>. Australia's inward FDI stock has grown by a compound annual rate of 8.5 per cent.

#### *Descriptive statistics of the targeted sample*

Table 2 shows that over the period from 2003 to 2012, for 68 qualified observations in

the Australian Stock Exchange, the mean announced abnormal return (ANNCAR) for event window (0,+1), (-1,+1), and (-2,+1) are 3.2%, 3.0%, and 5.9%, respectively. The mean withdrawn abnormal return (WITHCAR) for event window (0,+1), (-1,+1), and (-2,+1) are -0.9%, -2.2%, and -2.3%, respectively. It seems that WITHCAR is opposite to ANNCAR and this observation is in line with our expectation.

With regard to the explanatory variables, our sample in the Australian context is similar to the sample of Madura and Ngo (2012) for the U.S. context. The magnitude of announced cumulative abnormal return (ANNCAR (0,1) = 3.2%) over the period 2003 to 2012, is quite comparable to that of Madura and Ngo which covers the period 1980 to 2006 (ANNCAR (0,+1) = 2.58%). Table 3 gives more information regarding other characteristics of our sample.

## **4. Research results**

### **4.1. Univariate analysis**

#### *4.1.1. Event study results*

The valuation effects of the merger proposal announcement are reported in Table 4. For announced mergers involving public targets, acquirers experience negative valuation effects, which is in contrast to positive valuation effects witnessed in announced mergers involving private targets. This empirical result is in line with previous studies and with the literature, which suggests mergers involving private targets bring higher returns for bidders.

The results from estimating the valuation effects of withdrawn merger proposals are displayed in Table 5. For the proposed mergers involving public targets, the withdrawal an-

**Table 4: Mean cumulative abnormal returns of proposal announcements**

Days	Public targets		Private targets	
	N	Mean CAR	N	Mean CAR
-3	55	0.29%	13	3.06%
-2	55	-0.15%	13	-5.42%
-1	55	-0.25%	13	0.49%
0	55	-1.09%	13	4.19%
1	55	1.12%	13	3.22%
2	55	-0.02%	13	5.14%
3	55	-0.70%	13	-3.09%
(-2,+1)	55	-0.38%	13	2.47%
(-1,+1)	55	-0.23%	13	7.89%
(-1,0)	55	-1.34%	13	4.68%
(0,+1)	55	0.03%	13	7.40%

nouncement elicits a mean 2-day share price response of 1.37%, when the event window is (0,+1). For the proposed mergers involving private targets, the withdrawal announcement elicits a significant mean share price response of -3.49% over the 2-day window of (0, +1). Overall, the pattern of withdrawn cumulative abnormal returns of Australian companies in this study is similar to that of US listed firms. That is, the withdrawn cumulative abnormal returns of mergers involving public targets do not vary much in the event of the announcement of the withdrawals of mergers. However, for mergers involving private targets, the withdrawn cumulative abnormal returns experience significant negative returns.

In the next step, we repeat the comparison of bidder abnormal returns when withdrawal an-

nouncements involve public targets versus private targets, while controlling for the method of payment. The results are presented in Table 6. Panel A of Table 6 presents the results based on transactions in which cash or a combination of cash and stock was the intended method of payment. During the 2-day window (0,+1), the bidder experiences the share prices response of 0.76% for public targets, while for withdrawals involving private targets, the result is -2.14%. The result is significant at a 10% level. The same observation is seen at Panel B, while mergers involving private targets have significant and negative returns in comparison with those involving public targets. The comparison between these two subsamples, based on the nonparametric t-test and Mann-Whitney-Wilcoxon U test results, proves that the

**Table 5: Mean cumulative abnormal returns of proposal withdrawals**

Days	Public targets		Private targets	
	N	CAR	N	CAR
-3	55	-0.18%	13	-0.71%
-2	55	0.46%	13	0.05%
-1	55	-0.65%	13	0.78%
0	55	1.28%	13	-1.84%
1	55	0.09%	13	-1.65%
2	55	0.61%	13	-0.48%
3	55	-0.77%	13	-1.03%
(-2,+1)	55	1.18%	13	-2.66%
(-1,+1)	55	0.71%	13	-2.71%
(-1,0)	55	0.63%	13	-1.06%
(0,+1)	55	1.37%	13	-3.49%

**Table 6: Bidder's valuation effects based upon target status and payment method**

Days	Public targets		Private targets		Public – Private	
	N	CAR	N	CAR	t-statistics	MWW – Z
Panel A - cash withdrawn merger						
(-1,+1)	21	-0.30%	5	-3.73%	2.66***	-1.79**
(0,+1)	21	0.76%	5	-2.14%	1.55*	-1.29*
Panel B - stock-swap withdrawn merger						
(-1,+1)	34	1.34%	8	-2.48%	2.63***	-3.52****
(0,+1)	34	1.74%	8	-3.58%	2.84***	-3.29****

*Note: Table 6 provides the bidder's valuation effects due the merger withdrawal announcement. The results are reported by whether the merger is paid with cash or a combination of cash and stock (in Panel A) or with stock only (in Panel B). Traditional t-statistics and nonparametric Mann-Whitney-Wilcoxon (MHW) statistics are reported to indicate the significance level of the results.*

*\*, \*\*, \*\*\* and \*\*\*\* indicate the significance level at 10%, 5%, and 1%, respectively.*

bidder's valuation effect upon the withdrawal announcement is worse when involving private targets.

Overall, the results of Table 6 demonstrate that the unique different bidder valuation effects, when withdrawing from a merger involving private targets versus public targets, is not attributed to the planned method of payment. These results support Hypothesis 1 - that withdrawn mergers involving private targets have negative valuation effects on bidders' abnormal returns. The results also reject Hypothesis 2 and imply that the above observation is unconditional on the method of payment. Overall, this observation is similar to what has been found in the US context by Madura and Ngo (2012), and is consistent with previous literature.

#### 4.1.2 Correlation matrix

Table 7 presents the correlation between variables in the six models for event window (0, +1). We do have correlation matrices for other event windows, which are not reported here.

Among the explanatory variables, we ob-

serve that ANNCAR has a negative correlation (-0.059) with WITHCAR, which means announced cumulative abnormal returns and withdrawn abnormal returns run in opposite directions. PRIV has a coefficient with WITHCAR of -0.372, which can be interpreted as withdrawals of mergers involving private targets have negative impact on bidders' returns. Using the test for the variance inflation factor (VIF), an indicator of multicollinearity, we have confidence in eliminating multicollinearity problems in our sample in all event windows.

#### 4.2. Multivariate analysis

With the result from the estimation of valuation effects section, we can conclude that returns of withdrawals are conditional on whether the target status is public or private. It is also noteworthy that the method of payment does not impact on that unique result. However, there are some other characteristics besides target status and form of payment that can also influence the returns of withdrawals of merger. Therefore, we conduct a multivariate analysis, which examines the correlation between spe-

**Table 7: Correlation matrix for variables with event window (0, +1)**

	<i>WITH CAR</i>	<i>ANN CAR</i>	<i>PRIV</i>	<i>PRIV STOCK</i>	<i>MULTI BID</i>	<i>RELATED</i>	<i>FIN CRISIS</i>	<i>ROA</i>	<i>RESIZE</i>	<i>BIDDER CASH</i>	<i>BIDDER DEBT</i>
<i>WITHCAR</i>	1										
<i>ANNCAR</i>	-0.059	1									
<i>PRIV</i>	-0.372	0.400	1								
<i>PRIVSTOCK</i>	-0.341	0.132	0.751	1							
<i>MULTIBID</i>	0.122	-0.082	-0.270	-0.203	1						
<i>RELATED</i>	0.210	0.101	-0.048	-0.028	0.103	1					
<i>FINCRISIS</i>	-0.135	-0.068	-0.217	-0.077	0.167	0.119	1				
<i>ROA</i>	0.341	-0.354	-0.452	-0.553	0.187	0.028	-0.009	1			
<i>RESIZE</i>	-0.119	-0.037	-0.001	-0.001	-0.132	-0.096	-0.071	0.033	1		
<i>BIDDERCASH</i>	0.089	-0.045	-0.134	-0.170	-0.009	0.257	0.252	-0.082	-0.149	1	
<i>BIDDERDEBT</i>	-0.322	-0.138	0.287	0.377	-0.067	-0.207	-0.169	-0.668	0.029	-0.119	1

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cific explanatory variables and the dependent variables on cumulative abnormal returns of withdrawn mergers. Because the BIDDERCASH, BIDERDEBT, and ANNCAR variables might be correlated, various full and reduced models are used with and without those variables to isolate their effects from the others.

In the following models, the event window for calculating WITHCAR and ANNCAR is (0,+1). Table 8 summarizes the estimation of models from 1 to 6. Clearly, the impact of PRIV and non-impact of PRIVSTOCK variables are the crucial point in this study, answering the main research questions. In addition, their results are also used as a crossed-check for the findings in the estimation of valuation effects.

The significantly negative coefficients of the PRIV variable across all six models support Hypothesis 1 that mergers involving targets with private ownership have negative and significant impacts on withdrawn cumulative abnormal returns. This result supports our argument that in contrast with mergers involving public targets, mergers involving private targets would bring positive returns to bidders. Therefore, withdrawals of mergers involving private targets should reverse the benefits anticipated by the market in the announcement period, leading to negative withdrawn abnormal returns. This finding is consistent with previous results presented in the estimation of valuation effects section.

As for the PRIVSTOCK variable, its coefficient is insignificant, which implies that valuation effects of announced withdrawals of mergers involving private targets are not conditional on the planned medium of payment. This result is consistent with the finding in the

earlier estimation of valuation effects. This raises an interesting implication. As pointed out by some previous researches, the method of payment should have significant impacts in announced merger abnormal returns. However, for withdrawn merger returns in particular, the method of payment does not have that much significant impact. One plausible explanation is that the market might perceive that the withdrawal simply postpones a merger bid and does not reflect a negative opinion of the private target shareholders about the bidder's stock value. This finding is also confirmed by the research of Madura and Ngo (2012).

The ANNCAR variable is significant in all models where this variable is applied. However, the coefficients of ANNCAR in these models are positive instead of negative, which is in contrast with our expectation. As an explanation for this issue, when checking cross-sectional analysis of ANNCAR versus WITHCAR in Table 2, it is shown that ANNCAR has a negative correlation with WITHCAR. This satisfies our expectation and implies that the valuation effects in response to withdrawn mergers are worse when the initial share price response at the time of the announced merger bid is higher, and that withdrawn merger abnormal returns will reverse the gain or loss that was caused by the announced merger abnormal returns previously. The withdrawal effect appears to be a reversal of the initially anticipated benefits that were impounded in the share price at the time the merger bid merger was first announced. This implies that the merger withdrawal effect is a partial correction of the benefits that were previously anticipated as a result of the merger announcement.



**Table 8: Analytical results for explaining WITHCAR – event window (0,+1)**

Independent Variables	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	Coefficients	P-value	Coefficients	P-value	Coefficients	P-value	Coefficients	P-value	Coefficients	P-value	Coefficients	P-value
Intercept	0.03	0.363	0.01	0.664	0.03	0.33	0.03	0.335	0.04	0.277	0.03	0.43
ANNCAR (0,1)	0.07	0.597			0.11	0.285			0.05	0.684	0.12	0.25
PRIV	<b>-0.13*</b>	0.056	<b>-0.11*</b>	0.06	<b>-0.14**</b>	0.035	<b>-0.11*</b>	0.053	<b>-0.12*</b>	0.061	<b>-0.14**</b>	0.03
PRIVSTOCK	0.03	0.716	-0.04	0.575	0.03	0.69	0.01	0.905	0.02	0.822	0.04	0.58
MULTIBID	0	0.901	0.01	0.793	0	0.962	0.01	0.84	0	0.915	0	0.99
RELATED	0.04	0.189	<b>0.06*</b>	0.057	0.05	0.101	0.04	0.174	0.05	0.144	0.04	0.16
FINCRISIS	<b>-0.07**</b>	0.03	<b>-0.06**</b>	0.038	<b>-0.06**</b>	0.043	<b>-0.07**</b>	0.024	<b>-0.07**</b>	0.032	<b>-0.07**</b>	0.04
ROA	0.02	0.535			<b>0.04*</b>	0.095	0.01	0.719	0.02	0.63	<b>0.04*</b>	0.08
RESIZE	0	0.335			0	0.279	0	0.33	0	0.301	0	0.33
BIDDERCASH	0.04	0.632					0.03	0.735			0.06	0.5
BIDDERDEBT	-0.01	0.559					-0.01	0.237	-0.01	0.451		
R <sup>2</sup>	30.02%		23.97%		29.04%		29.68%		29.74%		29.60%	
Adjusted R <sup>2</sup>	17.75%		17.84%		19.42%		18.77%		18.84%		18.68%	
F-statistics	2.45**		3.91***		3.02***		2.72**		2.73**		2.71**	
Significance F	0.017		0.004		0.007		0.01		0.01		0.01	
Number of obs	68		68		68		68		68		68	

Note: Table 8 provides multivariate analysis results of full and reduced-form models for event window (0,+1). Coefficients of each variable and p-value are reported to indicate the correlation and significance level of the results. R<sup>2</sup>, adjusted R<sup>2</sup>, F-statistics, significance F, and number of observations are also reported in the table.

\*, \*\*, \*\*\* and \*\*\*\* indicate the significance level at 10%, 5%, and 1%, respectively.

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Unlike our expectation, BIDDERCASH and BIDERDEBT variables are not significantly correlated with WITHCAR in the models. This appears to contradict the findings of Madura and Ngo (2012). A possible explanation for this might be the difference in definitions of variables. In their research, Madura and Ngo measured BIDDERCASH as the bidder's cash level as a percentage of total assets, minus the median cash-to-assets ratio for the bidder's industry, and BIDERDEBT as the bidder's total debt as a percentage of total assets, minus the median debt-to-asset ratio for the bidder's industry. However, due to data unavailability, we could not find the median industry ratios. Therefore, we simply define the variables BIDDERCASH as the bidder's cash level as a percentage of total assets, and BIDERDEBT as the bidder's total debt as a percentage of total assets. This might be the reason that drives the results in this paper not to come in line with expectation. If this explanation is true, it might be expected that the industry factor has significant impacts in explaining the variation of abnormal returns. There are several researches that confirm the industry effects on bidder withdrawn abnormal return, such as that of Madura and Ngo (2012). This opens an interesting research aspect for researches in this topic in the future.

Another interesting finding is that FINCRISIS is a new variable which has not yet been studied in previous studies about withdrawn merger proposals, but is negative and significant in all our six models. The negative coefficient of FINCRISIS can be interpreted as a bidder's withdrawn abnormal return will be worse in a bad economic and financial situation. With the fact that researchers of withdrawn mergers

have focused too much on firm and deal characteristics but not on macro-level variables, this finding might be important as it reminds researchers to take into consideration macroeconomic and financial environmental factors in their studies.

In summary, it can be confirmed that target status has a significant impact on withdrawn merger abnormal returns, and the impact is not conditional on the deal's intended method of payment. This finding for Australian companies is similar to that which has been done for US listed firms. We might expect this finding is universal for all markets, and further researches in different countries are needed to confirm our anticipation.

#### **4.3. Robustness checks**

As robustness checks, we test some different event windows for WITHCAR and ANN-CAR variables. Specifically, we apply the same above six models with two other event windows, which are (-1,+1) and (-2,+1).

##### *4.3.1. Robustness check with event window (-1,+1)*

Table 9 exhibits the results for our analysis with event window (-1,+1). Given the results, we can draw the same implications for event window (-1,+1) as for event window (0,+1) in earlier analysis. The coefficient of the PRIV variable is negative and significant in all six models, implying that mergers involving private targets have negative impacts on a bidder's returns. PRIVSTOCK is consistently statistically insignificant in all models, implying that method of payment does not impact on valuation effects of announced withdrawals of mergers involving private targets. The ANN-CAR variable is statistically significant, though

**Table 9: Analytical results for explaining WITHCAR - event window (-1,+1)**

Independent Variables	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	Coefficients	P-value	Coefficients	P-value	Coefficients	P-value	Coefficients	P-value	Coefficients	P-value	Coefficients	P-value
Intercept	0.00	0.999	-0.02	0.623	0.01	0.89	0.00	0.933	0.01	0.828	0.00	0.952
ANNCAR (-1,+1)	0.21	0.179		<b>0.22*</b>	<b>0.069</b>				0.18	0.236	<b>0.24*</b>	0.055
PRIV	<b>-0.19**</b>	0.018	<b>-0.13*</b>	0.056	<b>-0.19**</b>	0.013	<b>-0.13***</b>	0.048	<b>-0.18**</b>	0.022	<b>-0.19**</b>	0.011
PRIVSTOCK	0.09	0.377	-0.04	0.611	0.07	0.413	0.02	0.82	0.06	0.495	0.1	0.313
MULTIBID	0.02	0.664	0.03	0.512	0.01	0.754	0.03	0.517	0.02	0.684	0.02	0.694
RELATED	<b>0.07*</b>	0.072	<b>0.09**</b>	0.014	<b>0.08**</b>	0.031	<b>0.07*</b>	0.063	<b>0.07**</b>	0.044	<b>0.07*</b>	0.063
FINCRISIS	<b>-0.07*</b>	0.06	<b>-0.07*</b>	0.071	<b>-0.06*</b>	0.081	<b>-0.08**</b>	0.041	<b>-0.07*</b>	0.072	<b>-0.07*</b>	0.059
ROA	0.05	0.233		<b>0.06**</b>	0.031	0.031	0.01	0.747	0.04	0.323	<b>0.06**</b>	0.022
RESIZE	0.00	0.469		0.00	0.389	0.00	0.493	0.00	0.414	0.00	0.458	
BIDDERCASH	0.08	0.44			0.04	0.679					0.09	0.379
BIDDERDEBT	0.00	0.793			-0.01	0.168			-0.01	0.625		
F-statistics	3.04***		4.51***		3.76***		3.12***		3.33***		3.42***	
Adjusted R <sup>2</sup>	23.31%		20.77%		24.82%		22.19%		23.84%		24.54%	
Number of obs	68		68		68		68		68		68	

Note: Table 9 provides multivariate analysis results of full and reduced-form models for event window (-1,+1). Coefficients of each variable and p-value are reported to indicate the correlation and significance level of the results. R<sup>2</sup>, adjusted R<sup>2</sup>, F-statistics, significance F, and number of observations are also reported in the table.

\*, \*\*, \*\*\* and \*\*\*\* indicate the significance level at 10%, 5%, and 1%, respectively.

**Table 10: Summary of multivariate analysis results of six models for event window (-2,+1)**

Independent Variables	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	Coefficients	P-value	Coefficients	P-value	Coefficients	P-value	Coefficients	P-value	Coefficients	P-value	Coefficients	P-value
Intercept	0.01	0.767	-0.02	0.582	0.02	0.685	0.02	0.634	0.02	0.626	0.01	0.82
ANNCAR (-2,1)	0.17	0.047			<b>0.19***</b>	0.001			<b>0.15*</b>	0.052	<b>0.20***</b>	0
PRIV	<b>-0.22***</b>	0.003	<b>-0.17**</b>	0.025	<b>-0.22***</b>	0.002	<b>-0.18**</b>	0.012	<b>-0.22***</b>	0.003	<b>-0.23***</b>	0
PRIVSTOCK	0.11	0.242	-0.02	0.815	0.1	0.264	0.05	0.596	0.09	0.302	0.12	0.2
MULTIBID	0.04	0.405	0.05	0.303	0.03	0.483	0.05	0.235	0.04	0.398	0.03	0.44
RELATED	0.06	0.106	<b>0.10**</b>	0.02	<b>0.07**</b>	0.048	<b>0.07*</b>	0.092	<b>0.07*</b>	0.073	<b>0.06*</b>	0.1
FINCRISIS	0.07	0.535	-0.06	0.116	<b>-0.07*</b>	0.063	<b>-0.08**</b>	0.039	<b>-0.08**</b>	0.049	<b>-0.08**</b>	0.05
ROA	-0.01	0.717			<b>0.09***</b>	0.001	-0.02	0.638	0.06	0.202	<b>0.10***</b>	0
RESIZE	0.08	0.16			0	0.407	0	0.56	0	0.454	0	0.48
BIDDERCASH	0	0.492			-0.04	0.713					0.09	0.38
BIDDERDEBT	<b>-0.08**</b>	0.043			<b>-0.03***</b>	0.005	<b>-0.01</b>	0.48				
F-statistics	4.67***		4.89***		5.84***		4.49***		5.20***		5.25***	
Adjusted R <sup>2</sup>	35.39%		22.52%		36.62%		31.91%		36.07%		36.36%	
Number of obs	68		68		68		68		68		68	

*Note: Table 10 provides multivariate analysis results of full and reduced-form models for event window (-2, +1). Coefficients of each variable and p-value are reported to indicate the correlation and significance level of the results. R2, adjusted R2, F-statistics, significance F, and number of observations are also reported in the table.*

*\*, \*\*, \*\*\* and \*\*\*\* indicate the significance level at 10%, 5%, and 1%, respectively.*

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ANNCAR's coefficient is positive, which appears to contradict our expectation. However, with the correlation matrix for event window (-1,+1), we find that the coefficient of ANNCAR with WITHCAR is negative. We might explain that the coefficient of ANNCAR in our models is positive because of the side effects of other variables. BIDDERCASH and BIDDERDEBT variables are still not significantly correlated with WITHCAR. FINCRISIS is still negative and significant in all six models.

#### 4.3.2. Robustness check with event window (-2,+1)

From the multivariate analysis results for event window (-2,+1) presented in Table 10, we are able to draw the same conclusions as we did for event window (0,+1) and event window (-1,+1). Two key variables PRIV and PRIVSTOCK are in alignment with expectation. PRIV is negative and statistically significant in all models, and PRIVSTOCK is not statistically significant in all six models. The observation above allows us to draw the conclusion that withdrawals of mergers involving private targets have a negative impact on a bidder's returns.

### 5. Conclusions

Using a standard event study method, we find that a withdrawn merger proposal can reverse a previous gain or loss of the acquirer that has resulted from the announcement of the proposal. Moreover, using the OLS regression method, we realize that the abnormal return of withdrawal of mergers is affected by many characteristics, including the deal characteris-

tics, firm characteristics, and overall economic situation.

Specifically, we find that in the Australian context, the announced withdrawal of mergers involving private targets produces significantly negative valuation effects on average in comparison with withdrawal of mergers involving public targets. In other words, the valuation effects of acquirers in response to withdrawn mergers are significantly worse when involving private targets than public targets. Even when controlling the sample of observations according to stock payment only or cash payment, these results still hold true. This contributes to the literature by affirming that the effects of target status on withdrawn merger abnormal returns are not conditional on the method of payment.

In summary, this study leads to an implication that in the Australian context, the effect of withdrawal of a merger is a partial correction of the benefits that were previously anticipated as a result of the merger announcement, and target status has a significant impact on withdrawn merger abnormal return. This result holds true even when controlling for the method of payment. The similar implication about the impact of withdrawn merger proposals involving private targets on bidder's returns is also found in the U.S. context. We might expect that this unique response of mergers involving private targets is universal and might be found in other markets as well, such as in South East Asia and East Asia. Further work in these countries' contexts should cast more light on this issue.

### Notes:

1. From Thomson Financial SDC Platinum™ database.
2. The World Factbook, <https://www.cia.gov/library/publications/the-world-factbook/geos/as.html>, retrieved 22 April 2015.
3. Kearney's 2012 FDI Confidence Index, <http://www.atkearney.com/research-studies/foreign-direct-investment-confidence-index/2015>, retrieved 22 April 2015.

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