

What Factors Drive Takeovers in Australia?

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Abstract

We examine the relationships between the wealth changes associated with a takeover announcement to distinguish between three major competing motives—synergy, hubris, and agency. Empirical tests indicate that the synergy motive is the predominant explanation for the majority of takeovers in Australia; however, the evidence is consistent with the simultaneous presence of hubris in value-creating takeovers. The evidence also suggests agency, not hubris, is the primary motivation for the takeovers which result in value destruction.

Key words: takeovers; synergy; agency

JEL classification: G14; G34

1. Introduction

Mergers, acquisitions, and takeovers have been a dynamic part of the corporate finance field for decades and play an important role in reallocation of resources in an economy. Penrose (1959) described a firm as a collection of productive assets, whereby the long-term profitability of the firm is associated with the growth in productive opportunity to use its assets more efficiently. The quest for productive opportunity leads the firm to search for new products and markets via takeovers. A well-functioning takeover market is essential to the efficient allocation of resources and overall economic prosperity (Hutson, 2002). Takeovers are seen as an effective disciplinary tool, and the threat of a takeover forces incumbent management teams to operate to maximum efficiency (Jensen and Ruback, 1983).

The past few years have witnessed a surge in takeover activities both globally and in Australia. The last wave of such concentrated takeover activity occurred in

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the mid-1980s, which heralded an inundation of research on mergers and acquisition activity in Australia. There are three widely accepted motives for takeovers which have been advanced in the literature—synergy, agency, and hubris. The synergy motive proposes that acquisitions take place when the value of a combined firm is greater than the sum of the values of the individual firms (Seth et al., 2000). The synergies can be financial, such as tax effects, increased debt capacity, reduction in agency costs and bankruptcy costs, or operational synergies resulting from economies of scale, an increase in market power, and product expansion (Finn and Hodgson, 2005). The agency motive suggests that the acquiring managers embark on takeovers to pursue their own interest of maximizing their own utility at the expense of the shareholders of their firm. The growing emphasis around the world on companies developing good corporate governance practices is aimed directly at limiting these potential agency problems (Henry, 2004). The hubris motive implies that over-confident acquiring firm managers unintentionally make mistakes in evaluating the potential of takeover targets, thereby reducing the value of their shareholders' wealth when executing the takeover (Roll, 1986).

Motives for takeovers may be influenced by the governance and ownership structures of acquirer companies. In Australia, Corporate Governance policies are in their infancy and are predominantly derived from overseas initiatives, such as the Cadbury Committee on Corporate Governance in the UK (Henry, 2005). Australia has a unified Corporations Act (Corporations Act 2001), which governs takeovers in all states. By contrast, the US has numerous state legislations, which govern takeovers in each state. Most of the studies related to takeover objectives are published in the US. Australia is similar to the US in that it has a well-developed economy based on common law principles and an active equity market; however, the existence of institutional and regulatory differences suggests that US results may not hold in Australia (Bugeja et al., 2009).

In Australia, aggregate takeover activity is driven by fundamental economic factors (Finn and Hodgson, 2005). During most of our sample period, the Australian economy enjoyed significant growth and its fundamental factors were in good shape. The six-year sample period was chosen as it coincides with a surge in takeover activity witnessed in Australia, as well as corresponding to the establishment of the Takeovers Panel (commenced on 13 March 2000), which may have a significant impact on the motives underlying takeovers in the Australian market. The Panel's primary focus is on the quality and accessibility of information provided to the target shareholders and the market and on remedying, in the most appropriate manner, any unacceptable circumstances in relation to that information.

The existence of mixed empirical findings and the drawbacks of some of the methodological approaches used, make it difficult to interpret previous evidence and to draw conclusions about the acquiring manager's takeover motive from the perspective of Australian market. This paper is primarily motivated towards filling a gap in empirical research regarding the main motives of takeovers in Australia. Walter (1984) and Bishop et al. (1987) all came to the conclusion that, in Australia, takeovers are a way to help allocate capital to more valuable uses. The research

designs adapted to date have made it difficult to distinguish whether takeovers are symptomatic of hubris (Da Silva Rosa and Walter, 2004). This paper fills the gap by applying and extending the empirical methodology used in the seminal study of Berkovitch and Narayanan (1993). Their study examined the impact of the underlying motive on the wealth of the shareholders of the firms involved in the takeover, by focusing on the daily share price movements surrounding the takeover announcement. The objective of this paper is to empirically investigate and clearly distinguish between the three underlying motives for managers pursuing takeovers in Australia. The findings of this paper will have a direct impact on market participants, particularly the acquiring firm's shareholders, as well as assessing the effectiveness of the regulations. We use an event study, which is arguably the most powerful analytical tool in the merger and acquisition field, over multiple event windows.

Due to the concurrent existence of all three motives in any sample of takeovers, past research drew conclusions depending on average abnormal returns. The findings were inconsistent and inconclusive (Dodd and Ruback, 1977; Bradley et al., 1988). Some of the earlier research used monthly returns for their sample but, in order to understand the motives in a short horizon, daily data, which we have used in this study, is better. Our hypothesis testing approach, which is similar to Berkovitch and Narayanan's (1993) study, takes into account the possibility that all three explanations may be present simultaneously in our sample. To the best of our knowledge, this approach has not been undertaken before in an Australian context. By using Australian data we hope to extend the literature and also to evaluate some of the real motives behind takeovers in Australia.

Our analysis indicates that the synergy motive explains the majority of takeovers that resulted in positive total gains; however, there is evidence to suggest the simultaneous presence of a moderate form of hubris. On these foundations, the paper is organized as follows. Section 2 provides a literature review. Section 3 describes the sample and methodological approach, including hypotheses. Section 4 reports the results and discussion of the empirical analysis. Section 5 concludes.

2. Literature Review and Theoretical Background

The creation of synergies that result from takeovers is one way a firm can achieve long-term profitability. There are numerous sources of productive opportunities that result from taking over another firm. Perhaps the most widely cited source of productive opportunity in the literature is the replacement of inefficient target firm management. The empirical evidence suggests takeover targets have usually performed poorly in periods leading up to a takeover announcement. In this circumstance, both sets of shareholders gain from the expertise of the acquiring firm's management taking over the underperforming firm and turning its performance around (Brown and Da Silva Rosa, 1997). Seth (1990) and Bradley et al. (1988) provide a comprehensive explanation of the synergy motive, proposing that the managers of target firms and of acquirer firms act in the

best interest of their respective shareholders, in essence, seeking to maximize their wealth via economic gains. The empirical evidence supporting the synergy motive is found in studies which have reported positive total gains (target plus acquirer), which include a sample of tender offers (Bradley et al., 1988), made with a combination of cash-strapped firms and cash-rich firms (Hubbard and Palia, 1999). Noteworthy is the important research of Eddey (1993) and Hutson and Kearney (2001), who contend that synergies are annulled because the takeover regulations in place to protect shareholders are one-sided and favor the target firm.

In relation to the hubris motive, Roll (1986) postulates that the over-confidence of an acquiring firm's management induces them to make mistakes in evaluating the target firm, by either over-valuing the firm or over-estimating the benefit derived from acquiring the firm. This leads to the acquiring firm paying too much for the target firm, which diminishes the synergistic gains from the takeover, if in fact there were any available in the first place. The over-confidence usually extends from the performance of their firm. As empirical evidence exhibits, a takeover announcement usually follows a period of exceptionally good performance experienced by the acquiring firm (Dodd and Officer, 1987; Simmonds, 2004). Hubris can even be the consequence of an acquiring firm's manager's pride, in the sense of his not wanting to lose in situations where the takeover is hostile, or when there are multiple bidders bidding up the price far beyond its intrinsic value. Firth (1980) and Roll (1986) provide empirical evidence supporting the existence of the extreme version of the hubris motive. Assumptions of the hubris motive drawn from Seth et al. (2000) are the irrationality of the acquirer's management and the asymmetric information existing between the acquirer's and the target's management about the wealth gains associated with the takeover.

Morck et al. (1990) contend that managers of acquiring firms engage in takeover activity with the intent of pursuing their own personal interests, rather than the interests of the shareholders, which is in stark contrast to the two other motives. The consequence of such activity could be detrimental to the shareholders, in that pursuing the takeover could result in negative wealth effects. This is known as the agency motive for takeovers and is possible because of the agency relationship which exists between managers and shareholders of a firm. A takeover is a viable way to inflate the assets under management's control (Marris, 1964). Furthermore, obtaining large amounts of assets also increases the acquiring firm's dependence on their management (Shleifer and Vishny, 1989). The use of free cash flow to fund a takeover is underpinned by agency behavior, as it promptly increases the size of the acquiring firm, which may give the perception that management is performing well (Jensen, 1987).

The existing empirical evidence has not been able to clearly distinguish between the different motives. This problem exists because the authors drew conclusions based on average total gains (Firth, 1980; Malatesta, 1983; Roll, 1986; Bradley et al., 1988), therefore making it difficult to establish the motive for takeovers due to the simultaneous existence of all three. The study of Berkovitch and Narayanan (1993) took a different approach. By examining the correlation

between the abnormal return of the target firm and the total abnormal return gained by both parties involved in a takeover, as well as, the correlation between the target's and the bidder's abnormal returns, they found that 76% of takeovers were primarily motivated by anticipated synergistic outcomes. However, the evidence was also consistent with the simultaneous existence of a moderate form of hubris. It was also observed that agency, not hubris, was the dominant motive explaining the negative total gain sub-sample. Gondhalekar and Bhagwat (2003) supported this evidence when specifically examining the three competing motives using correlations, finding that, overall, the synergy motive dominates takeover activity. Similar results were also found by Seth et al. (2000) when analyzing the motives for cross-border acquisitions of US firms by foreign firms.

Among Australian studies, Walter (1984) and Bugeja and Walter (1995) found that abnormal returns during the announcement window were consistent with the hubris motive, due to the "winner's curse" in auction-style contests. Conversely, McDougall and Round (1986) concluded that "... takeovers appear to have been caused by so-called managerial (agency) motives." Although an accounting methodology was applied in this paper, a striking feature was the consistency of the results with Avikiran's (1999) and Sharma and Ho's (2002) studies, who found that the acquiring firm performed worse in the post-takeover period when compared to both its pre-takeover period and with industry equivalents who did not engage in takeover activity.

3. Data and Methodology

3.1 Data

A preliminary sample was obtained consisting of takeover announcements during the period from March 2000 to December 2006 relating to Australian firms. Takeover announcements were sourced from two prominent databases: Bloomberg Mergers and Acquisitions and Aspect Huntley Data Analysis. The preliminary search captured 386 observations. A screening process was then applied to remove observations that were not suitable for this study. Daily share price data of the target and acquirer firm were required for 130 days before the takeover announcement to 10 days after the announcement. All daily closing share price data for each firm in the final sample were obtained, primarily, from the Bloomberg's Australian Stock Exchange Market database. The data were adjusted for any changes which may have artificially distorted the share price, such as bonus issues, stock splits, dividends, etc. Applying the filter criterion to the preliminary sample of announcements yielded a final sample containing 76 matched acquirer and target firms involved in a takeover announcement.

3.1.1 Descriptive Statistics

In Table 1, the descriptive statistics for the entire sample used in this analysis are shown for the 21-day event window [-10, +10] around the takeover announcements.

Table 1. Descriptive Statistics for Takeover Gains (\$ m) in the Sample

| | Mean | Median | Minimum | Maximum | Range |
|----------------|-------------|---------------|----------------|----------------|--------------|
| Acquirer | 44.56 | 6.32 | -649.63 | 2,245.64 | 4,616.86 |
| Target | 146.24 | 39.12 | -62.42 | 3,004.82 | 4,029.65 |
| Total Combined | 190.80 | 49.84 | -233.22 | 3,967.23 | 4,200.45 |

Notes: Target and acquirer gains are computed by multiplying the firm's cumulative abnormal returns by the market value of the firm's equity as of the end of the 30th trading day prior to the announcement. Target gain is adjusted by reducing the value of target shares held by the acquirer. The combined firm total gain is the sum of the target and acquirer gains.

Although the gains in Table 1 do not necessarily have a direct impact on the findings of this analysis, they do demonstrate the wide variation in dollar gains earned by the firms involved in a takeover announcement. The mean total dollar gain earned is \$190.8 million, of this 77% (\$146.5) is distributed to the target firms with the remaining 23% (\$44.5) captured by the acquiring firms. This is in line with the unequivocal evidence presented in the literature review that, on average, target firm shareholders gain substantially when the firm receives a takeover bid, with the acquiring firm's shareholders only extracting a small (if any) proportion of total gain.

3.2 Methodology

We examine the correlation between the abnormal returns of the target firm and the total abnormal returns gained by both parties (the combined firm) involved in a takeover as well as the correlation between the target and acquirer's abnormal returns, as per Berkovitch and Narayanan (1993).

3.2.1 Synergy vs. Agency

In the first test, the synergy motive is compared with the agency motive, without the confounding effects of hubris, by testing the sign of the correlation between target and total gains. Hubris is eliminated in this case since it implies the target and total gains are uncorrelated. The agency motive is more likely to be present in takeovers with negative total gains than in takeovers with positive total gains. Thus, the splitting of the full sample into sub-samples based on total gains would imply the following hypotheses:

H1: Takeovers are primarily motivated by synergy. Therefore, target and total gains will be positively correlated in takeovers with positive measured total gains as well as in takeovers with negative measured total gains.

H2: Takeovers are primarily motivated by agency. Therefore, target and total gains will be negatively correlated in takeovers with positive measured total gains as well as in takeovers with negative measured total gains.

If the motives co-exist in the entire sample then, the following hypothesis applies:

H3: Takeovers with positive measured total gains are motivated by synergy, and

takeovers with negative measured gains are motivated primarily by agency. Therefore, the target gains are positively correlated in takeovers with positive measured gains and negatively correlated in takeovers with negative measured gains.

3.2.2 Hubris vs. Synergy

In the sub-sample with positive total gains, the hubris and synergy motives are isolated, as the agency hypothesis (which predicts negative total gains) is eliminated. The test to distinguish between the two motives focuses on the correlations between acquirer and target gains, where the acquirer gains may be positive or negative. If the synergy hypothesis is the dominating motive for this sub-sample, there should be a statistically significant positive correlation between target and acquirer gains, whereas the hubris hypothesis would indicate a negative correlation between the two.

H4: In the absence of hubris, target and acquirer gains are positively correlated in the sub-sample of positive total gains.

3.2.3 Hubris vs. Agency

The negative total gains sub-sample allows for the assumption that the synergy hypothesis is eliminated, and the investigation lies in determining whether the agency or hubris hypotheses represent the dominant explanation for this sub-sample. Both hypotheses predict a negative correlation between the target and acquirer gains; therefore, to distinguish between the two, it is necessary to focus on the correlation between target gains and total gains. The agency motive suggests that this relationship will be negative; the hubris motive implies no such relationship.

H5: In the absence of hubris, target and total gains are negatively correlated, and target and acquirer gains are negatively correlated in the sub-sample of negative total gains.

3.3 Hubris and the Intercept Term

To further investigate the presence of hubris, Berkovitch and Narayanan (1993) propose examining the intercept (α) in the regressions of the target gains on total gains. This is important for judging overpayment in takeovers, and hence the presence of hubris. For example, takeovers with $\alpha = 0$ imply the target gain would be zero if the total gain were zero, indicating there was no overpayment by the acquirer. On the other hand, takeovers with a statistically significant α imply that the target would gain even if total gains were zero, suggesting the presence of hubris as the acquirer has overpaid for the target.

H6: Takeovers are primarily motivated by synergy and, in the absence of hubris, the intercept between target and total gains and target and acquirer gains is 0.

H7: Takeovers are primarily motivated by agency and, in the absence of hubris, the intercept between target and total gains and target and acquirer gains is 0.

3.4 Event Study

The estimation window will cover the period from 130 trading days prior to the announcement to 30 days before the announcement date, thus giving a total of 100 observations for the estimation event window. The size of this estimation window is similar to those utilized in other studies of the mergers and acquisitions (see Peterson, 1989). The three event windows chosen for this paper are 3, 11, and 21 days. In event time, day 0 is the day of the takeover announcement, as announced on the Australian Stock Exchange (ASX). The market model estimates normal returns through an ordinary least squares (OLS) regression over the estimation period, which is based on the relationship between a firm's share price return and the returns of a market index. The Standard & Poor's (S&P) ASX 200 Accumulation Index is the market index chosen to measure the market returns. The continuous daily share price return of each firm in the sample (R_{it}) and market index return (R_{mt}) are calculated for the estimation window $[-130, -30]$ and over all event windows:

$$R_{it} = \ln(P_{it}/P_{it-1}) \quad (1)$$

$$R_{mt} = \ln(P_{mt}/P_{mt-1}). \quad (2)$$

For the estimation period, the market model assumes that there is a linear relationship between the returns from a given stock and the market index. This is determined by an OLS regression of the form:

$$\hat{R}_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}. \quad (3)$$

The Scholes and Williams (1977) adjusted beta reinforces the market model to account for the non-synchronous bias:

$$\beta_{iSW} = \frac{\beta_i^+ + \beta_i + \beta_i^-}{(1 + 2\rho)}, \quad (4)$$

where β_{iSW} is the estimated Scholes-Williams adjusted beta for firm i ; β_i^+ , β_i , and β_i^- represents the beta estimates from the market model regression using a lead, standard, and lag beta; and ρ is the slope of the coefficient of an OLS regression of the market return on a single observation lagged value.

The corresponding Scholes and Williams (1977) adjusted alpha (α_{iSW}) in conjunction with the adjusted β_{iSW} is calculated. The abnormal return (AR_{it}) for each day in the event window is calculated as:

$$AR_{it} = R_{it} - (\alpha_{iSW} + \beta_{iSW} R_{mt}). \quad (5)$$

The cumulative abnormal return CAR_{it} is the summation of the firm's AR_{it} over the respective event window. Average abnormal return (AAR_{it}) is calculated as:

$$AAR_t = \sum \frac{AR_{it}}{N}, \quad (6)$$

and $CAAR_n$ is the summation of AAR_t over the given event window. The acquirer, target, and total $CAAR_n$ is used in the analysis to determine the motive for a takeover. First, significance of AAR_t or $CAAR_n$ is calculated by estimating the standard deviation for the event window's AAR, as per MacKinlay (1997). Afterwards, a two-tailed test is used to determine significance.

3.5 Correlation Analysis

To empirically test the hypotheses developed in Section 3, OLS regression model is employed:

$$Y = \alpha + \beta X + \varepsilon. \quad (7)$$

In determining the relationship between target and total gains, the response variable is the $CAAR_n$ of the combined firm (i.e., total gain). In contrast, when measuring the relationship between target and acquirer gains, the response variable is the $CAAR_n$ of the acquirer firms (i.e., acquirer gain):

$$\text{Target gain} = \alpha + \beta \text{Total gain} + \varepsilon \quad (8)$$

$$\text{Target gain} = \alpha + \beta \text{Acquirer gain} + \varepsilon. \quad (9)$$

4. Results

Table 2 shows the average abnormal return and cumulative average abnormal return for all observations, from days -10 to +10 relative to the announcement day. Analysis of Table 2 reveals that the AAR of the acquiring firms on the announcement day was -0.29%. Further, there were no significant AARs or CAARs to the acquiring firm. This result is consistent with Bishop et al. (1987). The AAR of the target firms provides more compelling evidence with a significant announcement day return of 6.43%. Evidence from the Australian market points to the target firms gaining substantially in the month of the announcement of a takeover bid, which is established by Dodd (1976), Walter (1984), and Anderson et al. (1994). The existing empirical evidence is not accurate in determining motives because the methodology does not clearly distinguish between the motives. Hence, the more in-depth analysis proposed by Berkovitch and Narayanan's (1993) study of the relationships between abnormal returns is necessary, a primary reason for this research.

Examining Panel A of Table 3, the regression results for the entire sample show the estimate of β is 0.34, indicating that the correlation between target and total gains is positive and significant. This outcome is in line with the synergy hypothesis as the primary motivation for the entire sample. However, in the sample of positive total gains, the estimate of β is 0.58, indicating a positive correlation, while a negative correlation is found in the negative total gains sub-sample, with a β

estimate of -0.26 . The findings in Panel A support the H3 hypothesis, that synergy is the primary motive for takeovers in the positive total gain sub-sample, while agency is the primary motive in the negative total gain sub-sample.

Table 2. Daily Market-Adjusted Abnormal Returns for Aggregated Acquirers and Targets Engaged in Takeover Activity for -10 to 10 Days

| Panel A: Average Abnormal Returns | | | | | | |
|-----------------------------------|-----------|-------------|---------------|-------------|---------------|-------------|
| Event Day | Acquirers | | Targets | | Total | |
| | AAR % | t-statistic | AAR % | t-statistic | AAR % | t-statistic |
| -10 | 0.19 | 0.86 | -0.02 | -0.09 | 0.16 | 0.76 |
| -9 | -0.16 | -0.75 | 0.14 | 0.52 | -0.03 | -0.24 |
| -8 | -0.07 | -0.39 | 0.07 | 0.25 | -0.01 | -0.13 |
| -7 | -0.06 | -0.29 | 0.05 | 0.18 | -0.02 | -0.11 |
| -6 | 0.31 | 1.34 | 0.47 | 1.72 | 0.77 | 3.07 |
| -5 | 0.51 | 1.45 | 0.27 | 0.63 | 0.77 | 2.08 |
| -4 | -0.18 | -0.62 | 0.05 | 0.10 | -0.13 | -0.51 |
| -3 | 0.11 | 0.46 | 2.39 | 0.88 | 2.49 | 1.34 |
| -2 | 0.16 | 0.58 | 4.94** | 3.74 | 5.10* | 4.32 |
| -1 | 0.31 | 1.37 | 5.48** | 6.54 | 5.78** | 7.91 |
| 0 | -0.29 | -1.58 | 6.43** | 7.56 | 6.14** | 5.98 |
| 1 | 0.34 | 1.11 | 1.81** | 2.82 | 2.14 | 3.93 |
| 2 | 0.28 | 1.49 | 1.71* | 2.56 | 1.99 | 4.05 |
| 3 | -0.05 | -0.17 | 0.79* | 2.14 | 0.73 | 1.96 |
| 4 | -0.10 | -0.39 | -0.03 | -0.11 | -0.13 | -0.49 |
| 5 | 0.16 | 0.77 | 0.15 | 0.50 | 0.31 | 1.27 |
| 6 | -0.28 | -1.58 | 0.49 | 1.01 | 0.21 | -0.57 |
| 7 | 0.06 | 0.28 | -0.02 | -0.07 | 0.03 | 0.21 |
| 8 | 0.34 | 1.10 | 0.25 | 1.40 | 0.58 | 2.50 |
| 9 | -0.05 | -0.23 | 0.09 | 0.30 | 0.04 | 0.07 |
| 10 | 0.06 | 0.42 | 0.14 | 0.48 | 0.20 | 0.90 |

| Panel B: Cumulative Average Abnormal Returns | | | | | | |
|--|-----------|-------------|----------------|-------------|----------------|-------------|
| Event Window | Acquirers | | Targets | | Total | |
| | AAR % | t-statistic | AAR % | t-statistic | AAR % | t-statistic |
| $[-1, +1]$ | 0.37 | 1.03 | 13.71** | 2.95 | 14.06** | 3.34 |
| $[-5, +5]$ | 1.26 | 0.94 | 23.98* | 2.07 | 25.20* | 1.96 |
| $[-10, +10]$ | 1.61 | 0.59 | 25.63* | 1.96 | 27.13* | 1.94 |

Notes: * and ** denote significance at the 10% and 5% levels. Panel A shows the average abnormal return (AAR) for the acquirer, target, and combined firms over the event window. Panel B shows the cumulative average abnormal return (CAAR) to all sets of firms.

The results in Panel B indicate a negative correlation between target and acquirer gains where, although not significant, the estimate of β is -0.62 . A positive total gain has a β of -0.38 , while the sample of negative gains has a significant β of 0.22 . This demonstrates that the entire sample appears to support the hubris hypothesis, however, the clear differences in the correlation between target and acquirer gains across the sub-samples of positive and negative total gains

indicate that other motives may also be present. Since both agency and hubris result in negative correlations between target and acquirer gains, it cannot be concluded whether only hubris is present or not by looking at this result. Therefore, it is necessary to revisit Panel A, where the significant negative correlation between target and total gains in the negative total gain sub-sample implies the H5 hypothesis cannot be rejected. The conclusion drawn is that agency, not hubris, accounts for the negative total gain outcome.

Table 3. Relationship between Target Gains and Total Gains, and between Target Gains and Acquirer Gains over an 11-Day [-5, +5] Event Window

| Panel A: Target Gain = $\alpha + \beta$ (Total Gain) | | | | |
|---|----------|----------------------------|---------------------------|----------------------|
| Sample | N | α | β | R² |
| All | 76 | 71.45** (4.56) | 0.34* (1.86) | 0.25 |
| Positive Total Gains | 52 | 23.73 (1.41) | 0.58** (3.44) | 0.38 |
| Negative Total Gains | 24 | 9.66 (0.75) | -0.26** (-5.47) | 0.57 |
| Panel B: Target Gain = $\alpha + \beta$ (Acquirer Gain) | | | | |
| Sample | N | α | β | R² |
| All | 76 | 67.11** (4.56) | -0.62 (-0.85) | 0.05 |
| Positive Total Gains | 52 | 63.78* (1.91) | -0.38 (-0.44) | 0.14 |
| Negative Total Gains | 24 | 23.49 (1.10) | -0.22* (-2.84) | 0.27 |

Notes: * and ** denote significance at the 10% and 5% levels. In Panels A and B coefficients are estimates for the entire sample and the sub-samples of positive total gains and negative total gains, with N denoting the size of each sample, α the intercept, and β the correlation between the two variables. The numbers in parentheses are White's (1980) heteroskedasticity consistent t-statistics.

Exploring the intercept (α) estimates sheds further light on the motives underlying a takeover bid, as it determines whether overpayment occurred in the takeovers, suggesting the presence of hubris. When the target gain is regressed against total gain in Panel A of Table 3, the intercept for the entire sample is 71.45, which indicates hubris may be present in the sample. However, α is not significantly different from zero for either sub-sample. This finding is consistent with hypotheses H6 and H7 because, under the synergy hypothesis, in the absence of hubris, the target gain should be zero when the total gain is zero as no synergy is created. Similarly, under the agency hypothesis, when the total gain is zero, there is little to no agency problem and, hence, the target gain must be close to zero. On the other hand, the hubris hypothesis would postulate the target gain to be positive, even if the total gain is zero.

Examination of the intercept (α) in Panel B leads to the rejection of the H6 hypothesis in favor of the H7 hypothesis. This is because the intercept is

significantly positive in the sub-sample of positive gains, but not significantly different from zero in the sub-sample of negative gains. This result is consistent with the examination of the β coefficients as there is evidence of the presence of hubris in the positive gain sub-sample and the absence of hubris in the negative gain sub-sample. Intuitively, the conjecture drawn from the intercept analysis confirms the presence of a moderate form of hubris when synergy is the primary motive, while also supporting the view that the negative gains experienced by acquirers are primarily due to agency and not to hubris. We can conclude that the takeovers that resulted in negative total gains were motivated by agency. Conversely, takeover announcements that resulted in positive total gains were primarily motivated by synergy, even though there is evidence of the simultaneous presence of a moderate form of hubris.

4.1 3-Day Event Window

Panel A of Table 4 indicates that, for the entire sample, β is 0.57, representing the relationship between target and total gain is positive and significant. However, unlike the [-5, +5] event window, this significantly positive relationship holds across both the positive and negative gain sub-samples, with $\beta = 0.72$ and $\beta = 0.29$, respectively. These findings support the H1 hypothesis that synergy is the primary motivation in takeover announcements. Panel B shows that the entire sample has a negative β and significant correlation. There is a positive and statistically significant relationship between target and acquirer gains for the positive total gain sub-sample. Also, $\beta = 0.43$ is consistent with the synergy hypothesis (H4). This outcome signals that hubris is not present in the positive gain sub-sample. In contrast, the results do not support the H5 hypothesis, with $\beta = -0.08$ not significant. These results imply the probable presence of hubris in the negative gain sub-sample; thus, it can be interpreted that, in some instances, the managers of the acquiring firms incorrectly estimate the synergistic gains.

In Panel A the intercept is not significant in the sub-samples of positive and negative total gains. This is consistent with the synergy and agency hypotheses, as target gain should be zero when there is no total gain. As shown in Panel B, the insignificant intercept $\alpha = 87.58$ in the positive gain sub-samples eliminates any support for the presence of hubris when synergy is the underlying motive. In the negative total gains sub-sample the presence of hubris is confirmed. Overall, the evidence supports the H6 hypothesis and leads to the rejection of the H7 hypothesis. These outcomes are consistent with the results of the correlation (β) analysis, but are opposite to the findings of the [-5, +5] window, which found the presence of hubris in takeovers is primarily motivated by synergy.

In the 21-day event window (not reported here due to space constraints), the findings are similar to those in the 11-day event window, with the β having the same signs and significance across the entire sample, and the positive and negative gain sub-samples signifying that the H3 hypothesis cannot be rejected. The correlation being negative and not significant for the entire sample is symptomatic of hubris being present in the sample. Examination of the sub-samples indicates the

presence of hubris in the positive gain sub-sample, as the relationship between target and total gains is not significant, hence the H4 hypothesis can be rejected. Conversely, the relationship in the negative total gain sub-sample is significant, allowing support for the H5 hypothesis and demonstrating that takeovers that resulted in negative total gains occurred because the acquiring firms were motivated by agency. The intercept is not significant in the entire sample or in the sub-samples in either regression. This implies that there is no evidence of hubris in either the positive or negative total gain sub-samples, supporting hypotheses H6 and H7.

Table 4. Relationship between Target Gains and Total Gains, and between Target Gains and Acquirer Gains over a 3-Day [-1, +1] Event Window

| Panel A: Target Gain = $\alpha + \beta$ (Total Gain) | | | | |
|--|----------|----------------------------|---------------------------|----------------------|
| Sample | N | α | β | R² |
| All | 76 | 122.92 (1.18) | 0.57** (3.41) | 0.51 |
| Positive Total Gains | 60 | 109.38 (0.58) | 0.72** (3.71) | 0.63 |
| Negative Total Gains | 16 | 23.97 (0.75) | 0.29* (2.61) | 0.40 |

| Panel B: Target Gain = $\alpha + \beta$ (Acquirer Gain) | | | | |
|---|----------|----------------------------|----------------------------|----------------------|
| Sample | N | α | β | R² |
| All | 76 | 89.34 (0.73) | -0.42** (-10.25) | 0.68 |
| Positive Total Gains | 60 | 87.58 (0.65) | 0.43** (-6.94) | 0.52 |
| Negative Total Gains | 16 | 33.60* (3.88) | -0.08 (-0.69) | 0.07 |

Notes: * and ** denote significance at the 5% and 1% levels. In Panels A and B coefficients are estimates for the entire sample and the sub-samples of positive total gains and negative total gains, with N denoting the size of each sample, α the intercept, and β the correlation between the two variables. The numbers in parentheses are t-statistics.

4.2 Discussion

We found evidence of target firms gaining substantially in the month of the announcement of a takeover bid; however, the evidence did not clearly distinguish between the motives. Confining the study to the window of 11 days, we found that synergy was the primary motive for takeovers in the positive total gain sample, while agency was the primary motive in the negative total gain sub-sample. It was also found that some of the possible synergistic gains from a takeover available to the acquiring firms were transferred to the target firms due to the acquiring firms' managers' over-confidence (hubris). Agency, not hubris, accounts for the negative total gain outcome. Results indicate that the acquiring firms' management were acting in their own best interests. In the 3-day event window, synergy was found to

be the primary motivation in takeover announcements. The results further show that hubris is not present in the positive gain sub-sample, but there is a probable presence of hubris in the negative gain sub-sample. In some instances, the results can be interpreted as showing that the managers of the acquiring firms made mistakes in the estimation of the synergistic gains. In the 21-day event window, the findings are similar to those in the 11-day window, which indicate that takeovers that resulted in negative total gains occurred because the acquiring firms were motivated by agency. These agency-driven takeovers need to be checked by the regulators as such takeovers are only in the management's own interest.

The evidence against the hypothesis that acquiring managers have the motive and will to pursue takeovers to create economic value for their shareholders has implications for market participants, particularly shareholders of acquiring firms. This may lead to the existence of managerial performance packages that are put in place to align the interest of the acquiring firm's managers and shareholders. There is evidence that hubris is present and is a phenomenon which needs to be controlled. These results support the paying of control premiums to prevent hubris-induced takeovers as a way of hedging against unnecessary losses. The research by Kohers and Ang (2000) found firms implementing such hedging policies earned better returns than acquiring firms who did not.

5. Conclusions

This paper empirically examines the motivations underlying takeovers in Australia. The total cumulative average abnormal return in the 11-day event window was 25%, with the majority of this gain realized by the target firm, while the acquiring firms appeared to receive only negligible gains. This is consistent with previous Australian research, and the inference is that the introduction of the Takeovers Panel has not checked the synergistic gains available to the acquiring firm. However, this contradicts the research of Eddey (1993) and Hutson and Kearney (2001), who contend that synergies are annulled because the takeover regulations in place to protect shareholders impose inordinately high costs on the acquiring firm. The correlation analysis indicates that the synergy motive explains the majority of takeovers which resulted in positive total gains; however, there is evidence to suggest the simultaneous presence of a moderate form of hubris. Value-destroying takeovers that result in negative total gains were found to be motivated by agency alone.

Empirical tests over the 3-day event window still found that synergy was the dominant motive. Conflicting with results under the 11-day event window, the agency and hubris motives were both found to be the rationale for the value-reducing takeovers. The results of the 11-day event window are consistent with the longer 21-day event window. However, the findings are not as strong because the evidence is inconclusive as to the parallel existence of hubris with the synergy motive in value creating takeovers. The inference made from the multiple event windows is that, on average, managers seek to create economic value and appear to

have the ability to do so when pursuing takeovers; however, in some circumstances, they don't have the motive and/or will to create economic value for their firms. This is supported by the empirical analysis that shows takeover announcements resulting in negative total gains are circumvented by acquiring managers who are pursuing a takeover and acting in their own interest rather than in the best interests of their shareholders (agency motivated). In addition, the moderate form of hubris was found to co-exist with synergy in takeovers resulting in positive total gains.

One limitation of the study is that the final sample included only takeover announcements for firms that are listed on the ASX. Therefore, the findings may not be able to be generalized for private, unlisted firms. Previous literature has found multiple acquirers bidding in competition for target firms where the medium of exchange offered as consideration may have an effect on both abnormal returns and the division of takeover gains between the target and acquiring firms (Bradley et al., 1988). Taking these factors into account, this research could be extended to investigate sub-samples of multiple versus single acquirer takeovers and sub-samples of cash versus shares as well as mixtures of both. Another dimension could have addressed successful versus unsuccessful takeovers. We also acknowledge some limitation in the form of possible measurement error in this study.

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