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Motives for Acquisitions in the UK

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Abstract

This paper investigates the motives for acquisitions in the UK. Standard event study methodology is inadequate to distinguish between different motives for acquisitions in any sample. Berkovitch and Narayanan (1993) propose a different methodology to distinguish between competing motives in any sample. This methodology analyses the relationship between the target gain and total gain to distinguish acquisitions driven by efficiency from those driven by agency motives. To differentiate managerial hubris from agency problems, the relationship between target gain and bidder gain is also analysed. The results show that efficiency is the primary motive for acquisitions exhibiting positive total gains. However, there is evidence of managerial hubris in the sample. In acquisitions where total gains are negative, agency problems are the primary motive.

JEL Classification: G14, G34.

Key Words: Acquisitions, event studies, efficiency, agency problems, managerial hubris.

Motives for Acquisitions in the UK

1. Introduction

The effect of acquisitions on share prices has been one of the most analysed topics in financial economics. Such analysis is conducted to try and discover information about the motives for acquisition activity. A number of motives have been proposed by the literature.

Several authors have stressed the importance of efficiency gains in acquisitions. For instance, Manne(1965) suggests that, through the market for corporate control, acquisitions are a solution to the agency problem. Firms whose efficiency is poor due to agency problems will be taken over by predators and their performance improved. Jensen and Ruback(1983) note the improvement in efficiency that can arise through economies of scale, while Williamson(1989) argues that acquisitions can improve efficiency through a reduction in transaction costs. As a result of efficiency gains in whatever form, acquisitions should produce gains for both bidder and target shareholders.

On the contrary, Jensen(1986) proposes that acquisitions are not a solution to the agency problem, but, a manifestation of it. Acquisitions are one of the ways in which managers keep firms' free cash flow away from shareholders. Such acquisitions will have an indeterminate effect on the wealth of target firms, but will certainly have a negative effect on the wealth of bidding firms' shareholders.

Roll (1986) suggests that acquisitions are motivated by managerial 'hubris'. Bidders may have an underlying motive of reaping efficiency gains, but, hubris leads to overbidding. This means that the price paid transfers all / or a large proportion of any efficiency gains from an acquisition to target shareholders. The implication is that, on average, there will be a positive gain for target shareholders, but a negative gain for bidders.

Unfortunately, standard event study methodology cannot distinguish between these different explanations. In general, studies (for example, Bradley;1980 and Asquith;1983) find that the shareholders of target firms do well from acquisitions, enjoying significantly abnormal gains in share prices. However, the findings for bidders are more equivocal. For instance, Dodd(1980)) finds significantly negative abnormal returns for bidders, while, more recently, Schwert(1996) argues that the abnormal returns to bidding firms are not significant. Taken together, these findings can be interpreted in two ways. Either, all of the expected efficiency gains from acquisitions accrue to target shareholders through 'managerial hubris' or, acquisitions are primarily driven by managerial motives.

Berkovitch and Narayanan (1993) propose a different approach to try and distinguish between the different motives for acquisition activity. The methodology focuses on the relationship between the observed gain to target firms' shareholders and the total gain from acquisitions and the observed gain to target firms' shareholders and the gain to

bidding firms' shareholders. The objective of this paper is to apply the methodology to a sample of acquisitions in the UK in order to differentiate much better between the motives for acquisitions in this country. The paper continues as follows. Section 2 describes the Berkovitch and Narayanan approach and reviews the empirical evidence for the USA. Section 3 contains the data and methodology. The results from the regressions are discussed in section 4, while section 5 is the conclusion.

2. Motives for Acquisitions and Measurement of Gains

The methodology of Berkovitch and Narayanan (1993) focuses on the relationship between the observed gain to target firms and the total gain from acquisitions and the observed gain to target firms and the gain to bidding firms. They suggest that depending on the motive, different relationships can be identified. The relations are summarised in table 1.

Table 1
Summary of the Implied Relationships between Target and Total Gain, Target and Bidder Gain.

Hypotheses	Relationship between Target Gain and Total Gain	Relationship between Target Gain and Bidder Gain
Efficiency	Positive	Positive
Agency	Negative	Negative
Hubris	None	Negative

In an acquisition motivated by efficiency, it is expected that both target shareholders and bidding shareholders will gain from the expected performance improvements. The greater the expected total gain, then the greater the gain, on average, to target shareholders. In addition, the greater the gain to target shareholders, then the greater the gain to bidding firms shareholders. This implies a positive relationship between target gain and total gain and target gain and bidder gain.

In an acquisition motivated by managerial motives, the bidder management use the target to extract value from their own firm's shareholders. The value extracted is shared between target firm shareholders and the management of the bidder. Therefore, a decrease in total gain (due to management value extraction) will lead to an increase in target gain. An increase in target gain leads to a decrease in the gain for bidding firms' shareholders.

There still exists the issue of ‘managerial hubris’. Hubris implies no relationship between target gain and total gain, but does imply a negative relationship between target gain and bidder gain as wealth is transferred from bidders to targets. The potential for hubris means that in any sample of acquisitions, it is difficult to distinguish between the efficiency and managerial hypotheses. Berkovitch and Narayanan overcome this problem by examining the relationships between target and total gain plus target gain and bidder gain together.

Using this methodology, Berkovitch and Narayanan find that, in their sample of tender offers in the USA from 1963-88, there was a positive and significant relationship between target gain and total gain. This is consistent with the efficiency motive. They also find that the relationship between target and bidder gain is not significantly different from zero in the total sample and sample of positive total gains. In the latter regression, they find that for the overall sample, the intercept is significant. This result is echoed in the regression for acquisitions involving positive total gains but not the one involving negative total gains. This suggests the existence of hubris in the former sample and the absence of hubris in the latter sample. In addition, in acquisitions where the total gain is negative, there is a significantly negative relationship between target and bidder gain. This suggests that agency problems determine acquisitions in this sub-sample.

Zhang (1998) used the methodology to examine bank acquisitions in the US between 1981 and 1990. For the entire sample, the relationship between target gain and total gain is positive and significant. He also finds a significant negative relationship between bidder gain and target gain that is evidence of managerial hubris. However, again by distinguishing between acquisitions with positive and negative total gain, Zhang concludes, like Berkovitch and Narayanan, that they are determined by different motives; ones with positive total gain by efficiency; ones with negative total gain by agency.

3.0 Data and Methodology

The method used here is derived from Berkovitch and Narayanan (1993). The data consisted of acquisitions involving UK publicly limited companies between 1997 and 2001. Both bidders and targets had to be listed on the London Stock Exchange. The daily price quotations were taken from the Perfect Analysis Prices Database. Announcement dates for each acquisition were found from the Financial Times newspaper. From the data a sample of 94 paired bidders and targets were derived. This sample is comparable to that adopted by Zhang (1998).

Standard event study methodology was used to estimate the abnormal returns from each acquisition. The market model was used to estimate the normal returns for each of the securities. The market index used was the FT All Share Index. The regression equation used was:

$$R_{it} = \alpha_i + \beta_1 R_{mt} + e_{it} \quad (1)$$

Where:

R_{it} = return on stock i at time t.

α_i = intercept.

β_j = sensitivity of stock i to returns to the market index.

R_{mt} = return on market index.

e_{it} = error term.

Market model estimates using equation 1 were obtained using 120 days of daily returns running from day -160 to day -41 before the acquisition announcement date (The announcement date was taken as the immediate working day before the day when the acquisition was announced in the 'Financial Times'). For each of the firms, the period was checked to ensure that there was no information revealed that was not part of the normal course of trading.

The abnormal returns were based on the prediction errors of the market model. These are defined as:

$$AR_{it} = R_{it} - E(R_{it}) \quad (2)$$

Where $E(R_{it})$ equals the expected return using the market model estimates.

The daily abnormal returns were calculated for a window running from day -5 to day +5 surrounding the announcement date. This allows for an event window of 11 days. The Cumulative Abnormal Return (CAR) for each firm was calculated across this window. The target gain and bidder gain is found by multiplying the CAR for each firm by their respective market capitalisation six days prior to the announcement date (day -6) as shown below:

$$\text{Target Gain} = \text{CAR} * \text{Market Capitalisation} \quad (3)$$

$$\text{Bidder Gain} = \text{CAR} * \text{Market Capitalisation} \quad (4)$$

The total gain from the acquisition is the sum of bidder and target shareholders gain.

A cross-sectional regression involving the acquisitions in the sample was used to test the relationship between target and total gain, and between target and bidder gain. The model had the following form:

$$\text{Target Gain} = \alpha_1 + \beta_1(\text{Total Gain}) + \mu \quad (5)$$

$$\text{Target Gain} = \alpha_1 + \beta_1(\text{Bidder Gain}) + \varepsilon \quad (6)$$

Due to the substantial differences in magnitude between the different acquisitions, following Zhang(1998) the target gains, bidder gains and total gains were scaled by the sum of the market capitalisation for the bidder and target in each acquisition.

3.0 Results

3.1 Summary Statistics

Table 2 below provides summary statistics for the sample of acquisitions. For the overall sample, the average total gain is £-100.131 million. This negative value is greatly influenced by the negative returns for bidding firms. However, neither of these results is statistically significant. In 60% of acquisitions in the sample bidding firms' shareholders endure negative gains. In addition, consistent with previous work, there is a substantial divergence in the gains for bidders and targets. Target firms in the total sample actually enjoy average positive gains of £50.64 million. This is significant. In fact, in over 87% of acquisitions, target gains are positive.

Table 2 – Summary Statistics of the sample of Acquisitions from 1996-2001 (millions of pounds).

Sample	Gain to	Minimum	Maximum	Mean	Z statistic
All (n=94)	Bidder	-10303.893	510.323	-150.772	-1.3523
	Target	-371.653	1298.695	50.64	3.0165**
	Total	-10306.5	1809.018	-100.131	-0.8805
Positive Total Gains only (n=58)	Bidder	-103.663	510.323	37.291	2.9013**
	Target	-1.969	1298.695	68.469	2.7901**
	Total	0.024	1809.018	105.760	3.1474**
Negative Total Gains only (n=36)	Bidder	-10303.893	-0.374	-453.761	-1.5889
	Target	-371.653	460.043	21.916	1.1936
	Total	-10306.5	-0.378	-431.845	-1.511

** indicates significance at 5% level

* indicates significance at 10% level

Approximately 62% of the sample involved positive total gains. In this sub-sample, the average total gain was significant at £105.760 million. In this case, the average gains for

both target firms and bidding firms are significantly greater than zero. However, once again there is a great difference in the distribution of the gains with the average target gain almost twice that of the average bidder gain.

In acquisitions where there are negative total gains, the average total gain is £-431.845 million. However, as with the overall sample and the positive sub-sample, there is a considerable difference between the gains of bidders and targets. Most of the losses are borne by bidders who suffer an average loss of £-453.761 million. Meanwhile, even where average total gains are negative target shareholders actually gain, earning on average, £21.916 million.

3.2 Regression Results

Table 3 below illustrates the result for the OLS regression between target gain and total gain as well as the OLS regression between target gain and bidder gain. Panel A shows the results for the regression of target gain and total gain. For the overall sample, the positive coefficient of 0.2955 illustrates that the greater the total gain from an acquisition, the greater the gain for target shareholders. This significantly positive coefficient for total gain is echoed in the sub-sample of positive total gains. This suggests that efficiency is the dominant motive in this sub-sample and this dominates the overall sample. Where total gains are negative, changes in total gain have an insignificant effect on target gain. This suggests that negative total gain is borne mainly by bidding firms' shareholders and targets are insulated to an extent from such losses.

In the total sample, the intercept has a coefficient of 0.034 which is significantly positive. This indicates that where total gain is zero, there is still a large gain to target shareholders. This significantly positive coefficient is also found in the sub-samples of positive and negative total gain. Under the efficiency hypothesis, when total gain is zero, target gain should be zero. This is also the case if agency problems were the primary motive. However, managerial hubris predicts just such a coefficient. Therefore, the results suggest an element of managerial hubris implying a transfer of wealth from the shareholders of bidders to the shareholders of targets.

Table 3: Results for Regression between Target Gain and Total Gain plus Target Gain and Bidder Gain¹

Panel A : Target Gain = $\alpha + \beta(\text{Total Gain})$		
Sample	Intercept (α)	β
All	0.034 (8.9104)**	0.2955 (4.7103)**
Positive Total Gains Only	0.0187 (2.325)**	0.4947 (3.8451)**
Negative Total Gains Only	0.0163 (2.825)**	0.0545 (1.4122)
Panel B : Target Gain = $\alpha + \beta(\text{Bidder Gain})$		
Sample	Intercept (α)	β
All	0.04194 (8.2042)**	0.0825 (2.2091)**
Positive Total Gains Only	0.0633 (7.8215)**	-0.2635 (-2.3085)**
Negative Total Gains Only	0.00764 (1.3263)	-0.0582 (-1.1709)

** indicates significance at 5% level

* indicates significance at 10% level

The extent of managerial hubris can be further examined by the regression of target gain and bidder gain. The results are illustrated in Panel B of table 3. For the total sample there is a positive coefficient that is significant at the 5% level. This supports the efficiency hypothesis. However, for the sub-samples of positive total gains and negative total gains there are negative coefficients for the relationship between bidder gain and target gain. For the sub-sample of positive total gains, the correlation is significant. For the sub-sample of negative total gains, it is not. This negative sign could be due to either agency problems or managerial hubris. Investigation of the intercept term will reveal more information.

For the total sample, the intercept is significantly above zero. This result is echoed in the sub-sample with positive total gain. When total gains are negative, the intercept term is positive, but insignificant. The results suggest that when total gains are positive, targets enjoy positive gains if bidder gains are zero because of hubris on the part of bidding firms' managers. However, in the sub-sample where total gains are negative, the results suggest that if bidder gain is zero, then target gain is not significantly different. This does not support the theory of managerial hubris. Given that there is a negative correlation between target and bidder gain efficiency cannot be the main motive for acquisitions with negative gains. Instead, it suggests that agency problems may be the source of the

¹ Both Berkovitch and Narayanan (1993) and Zhang (1998) suggest that heteroscedasticity may be a problem in these regressions. Therefore, White's test (1980) was used and where necessary, t-statistics were adjusted using White's heteroscedasticity consistent estimators.

negative gains in such acquisitions. The losses in these transactions are borne primarily by bidding firms shareholders. But, there is not significant transfer of wealth to target shareholders. The losses for bidder shareholders represent value extraction by the managers of bidding firms.

Therefore, where total gains are positive, efficiency is the major motive for acquisitions, coupled with managerial hubris. Where total gains are negative, agency problems are the major motive. In the overall sample, the effects of the acquisitions with positive total gains outweigh the effects of the acquisitions with negative total gains.

3.3 Method of Payment

Myers and Majluf (1984) suggest that where there is imperfect information, the method of financing an acquisition can signal information to shareholders. In particular, they suggest that the use of equity conveys bad news. This theory is supported by the empirical literature (for example see Travlos; 1987). The findings of such studies imply that where the method of payment is cash, gain will be positive, while where the method of payment is equity, gain will be negative.

44 acquisitions (47% approximately) in our sample involved cash as the method of payment. 70.5% of these acquisitions involved positive total gain, which is higher than the overall sample. However, this still leaves a sizeable proportion of cash acquisitions producing negative gain. This is not expected under the Myers and Majluf hypothesis.

Table 4 – Summary Statistics of the Sub-sample of Cash Acquisitions from 1996-2001 (millions of pounds).

Sample	Gain to	Minimum	Maximum	Mean	Z statistic
All (n=44)	Bidder	-1202.42	290.199	-61.635	-2.0987**
	Target	-24.353	460.043	49.185	4.8135**
	Total	-1206.26	421.881	-12.451	-0.4278
Positive Total Gains only (n=31)	Bidder	-103.663	290.199	43.039	4.4685**
	Target	0.328	437.224	48.084	5.2767**
	Total	0.498	421.881	91.123	6.9154**
Negative Total Gains only (n=13)	Bidder	-1202.42	-24.249	-311.244	-7.2566**
	Target	-24.353	460.043	51.809	4.016**
	Total	-1206.26	-0.827	-259.435	-6.4799**

** indicates significance at 5% level

The summary statistics for the cash acquisitions sub-sample are shown in table 4. They show a similar picture to the overall sample. This suggests that the method of payment is not a significant factor in determining gains from acquisitions.

To further assess the effects of the method of payment on the gain, the regressions were conducted on a sample of acquisitions where cash was the method of payment.

Table 5: Results for Regression between Target Gain and Total Gain plus Target Gain and Bidder Gain for Acquisitions where Cash is the method of payment²

Panel A : Target Gain = $\alpha + \beta(\text{Total Gain})$		
Sample	Intercept (α)	β
Cash (n=44)	0.0284 (6.3625)**	0.2858 (3.8604)**
Positive Total Gains Only (n=31)	0.0215 (1.9690)*	0.36455 (2.4581)**
Panel B : Target Gain = $\alpha + \beta(\text{Bidder Gain})$		
Sample	Intercept (α)	β
Cash (n=44)	0.0404 (5.9142)**	0.081110 (1.1278)
Positive Total Gains Only (n=31)	0.060813 (5.2343)**	-0.22683 (-1.5019)

** indicates significance at 5% level

* indicates significance at 10% level

Table 4 shows the results for the regressions for cash acquisitions. We conducted regressions for the overall sample of cash acquisitions and a sub-sample where total gain was positive. There were insufficient observations to conduct a meaningful regression of the cash acquisitions producing negative total gain.

The results shown in table 5 are similar to those found for the overall sample shown in table 3. Considering panel A, there is a significantly positive relationship between target gain and total gain for the cash sample and the sub-sample with positive total gain. This repeats the findings for the total sample. However, in panel B, while the signs the relationships between target gain and bidder gain are consistent with the overall sample, in the cash sub-sample, the coefficients are insignificant. Also, there is a significantly positive intercept for both cash acquisitions overall and the positive total gain sub-sample. This echoes the overall sample and suggests that cash acquisitions with positive total gain are no different. They exhibit efficiency as the underlying motive for such acquisitions. This is coupled with substantial managerial hubris, as evidenced by the substantial intercepts. Thus, this would suggest that the method of payment is not a major factor in this sample of acquisitions.

² As with the previous regressions, heteroscedasticity may be a problem here. Therefore, White's test (1980) was used and where necessary, t-statistics were adjusted using White's heteroscedasticity consistent estimators.

4.0 Conclusion

This paper uses the established methodology proposed by Berkovitch and Narayanan (1993) to test three motives of acquisitions in the UK. This methodology differs from standard event study methodology by examining the relations between target and total gains and between bidder gains and target gains to distinguish between the efficiency, agency and hubris motives for acquisitions. A sample of 94 acquisitions involving firms listed on the London Stock Exchange between 1997-2001 was used to test the motives.

For the overall sample, the average total gains were significantly positive. There was a significant positive relationship between target gains and total gains for the overall sample that seemed to be driven by the 62% of the sample which enjoyed positive total gains. This suggests that efficiency is the dominant motive driving acquisitions. This was supported by the significant positive relationship between target gains and bidders gains for the total sample. For the overall sample and the sub-sample of positive gains, there was little correlation between bidder and target gains, indicating evidence of managerial hubris in these acquisitions. The significantly positive intercept term in both regressions suggests suggests managerial hubris. The significant negative intercept for the positive sub-sample indicates that this hubris may not affect acquisitions with relatively low positive returns.

In the sizable minority of cases in the sample where total returns are negative, when target gains were zero, bidder gains were not very different implying little managerial hubris. These findings tend to support the view that such acquisitions are driven primarily by agency motives.

The results indicate that where total gains are positive, efficiency is the motive for acquisition activity and this drives the overall results for our sample. Managerial hubris appears to be a significant problem in these acquisitions. However, where total gains are negative, there is little hubris. Agency problems drive such acquisition activity. The method of payment does not seem to be a major determinant of the gains in this sample of acquisitions.

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