Journal of Business Finance & Accounting, 34(7) & (8), 1221–1244, September/October 2007, 0306-686X
doi: 10.1111/j.1468-5957.2007.02012.x

Bidder Gains and Losses of Firms Involved in Many Acquisitions

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Abstract: We examine shareholders' wealth effects (both in the short- and the long-run) of UK frequent bidders acquiring public, private, and/or subsidiary targets with alternative methods of payment between 1987 and 2004. We find that, in the short-run, bidders break even when acquiring public targets and gain significantly when buying private and subsidiary targets. This result is robust after controlling for relative size, bidder's book-to-market ratio, target origin, and industry diversification. Our long-run evidence, however, reveals that acquirers experience, significant wealth losses regardless of the target type acquired, indicating that markets may initially overreact to the acquisition announcement. As a result, we argue that contrary to Fuller et al. (2002) who suggest that acquiring private and subsidiary firms creates value for bidding firms, a reliable conclusion on bidders' shareholders wealth effects cannot be based solely on a short-run event study.

Keywords: mergers and acquisitions, frequent bidders, method of payment, public/private/subsidiary targets, short/long-term wealth effects

1. INTRODUCTION

The examination of shareholders' wealth effects (value creation or destruction) of Mergers and Acquisitions (M&As) is one of the most researched areas in finance. To date, a large number of studies have examined stock returns earned by targets and acquiring firms around merger announcements. A stylized fact emerging from this strand of research is that target firm shareholders earn positive and significant abnormal returns in the few days surrounding a takeover announcement, a finding that is rather unsurprising given the hefty premiums paid to target firms. Further, the sign and magnitude of returns to acquiring firms appear to depend on various

* The first and second authors are from Durham Business School, Durham University – Department of Economics and Finance. The third author is from Cass Business School – Faculty of Finance. They would like to thank George Alexandridis, John Doukas, Krishna Paudyal, Andrew Stark (editor), an anonymous referee, and participants at the 2005 European Financial Management Association (EFMA) meeting and the 2005 Multinational Finance Society (MFS) meeting for their helpful comments on earlier versions. (Paper received March 2005, revised version accepted November 2006. Online publication April 2007)

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characteristics such as the method of payment or the status of the target (i.e. public, private or subsidiary) while the combined entity (target and acquirer) earns positive abnormal returns around the announcement date.[1]

Hietala, Kaplan and Robinson (2003) argue that the acquisition announcement reveals not only the value of the acquisition itself but also the stand-alone value of the bidders, the potential synergies of the combination, and possibly the bidder overpayment. Hence, it is often impossible to determine the precise cause of the observed abnormal returns. Fuller, Netter and Stegemoller (2002) apply a sophisticated research design and use a sample of frequent bidders to control for (much of) the information about bidder characteristics contained in stock returns at the time of the acquisition announcement.[2] In particular, they examine short-term stock returns to US frequent acquirers making five or more bids within a three-year time horizon. The authors conclude that bidders experience significant wealth losses when buying public targets, while earning substantial gains when acquiring private and/or subsidiary targets. This, however, could be a rather premature conclusion as short-run event study conclusions rely on the assumption of market efficiency. It is possible that stock prices may temporarily deviate from their fundamental values due to investors' systematic over- or under-reaction to acquisition announcements. In such a case, it is not obvious that short-run studies can distinguish between real economic gains from market inefficiencies/investor psychology. Healy, Palepu and Ruback (1992) posit that:

> From a stock price perspective, the anticipation of real economic gains (from mergers) is observationally equivalent to market mispricing.

This view indicates that indeed systematic short-run under- or over-reaction to an event has gradually become acknowledged in the literature. Even Fama himself, the 'father' of the efficient market hypothesis, has recently conceded that stock prices could become 'somewhat irrational'.[3] In the light of the above, we believe that, Fuller et al.'s (2002) conclusion needs to be treated with certain caution.

The paper argues that complementary long-run analysis in this context is essential in order to reach a more accurate conclusion about shareholders' wealth effects. If the long-run results mirror the short-run findings, then their conclusion based on short-run findings would be well supported. However, if the short-run results are not supported by the long-run evidence, then it would be possible to cast doubt on whether Fuller et al.'s conclusion is economically sound and intuitive or merely reflects short-run market inefficiency. In addition, the paper seeks to examine whether their short-run findings are sensitive to the use of UK data and are indeed robust outside the US.

The paper examines the stock returns (both in the short- and the long-run) of UK frequent bidders that successfully acquired three or more public, private, and/or subsidiary targets using alternative methods of payment within a three-year period.

1 For evidence on acquirers' short-run stock returns see, for example, Dodd and Ruback (1977), Asquith, Bruner and Mullins (1983), Dennis and McConnell (1986), Bradley, Desai and Kim (1988), Franks and Harris (1989) and Draper and Paudyal (2006). For evidence of combined firms see, for example, Bradley, Desai and Kim (1988), Mulherin and Boone (2000) and Andrade, Mitchell and Stafford (2001).

2 Fuller et al. (2002) is the first major attempt in examining takeover announcement returns of multiple bidders involved in acquisitions of public, private, and subsidiary targets with alternative methods of payment between 1990 and 2000.

3 'As two economists debate markets, the tide shifts. Belief in efficient valuation yields ground to role of irrational investors Mr. Thaler takes on Mr. Fama' (*The Wall Street Journal*, October 18, 2004).

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Our comprehensive sample consists of 1,401 UK acquisitions taking place over an 18-year period (between 1987 and 2004). A notable point is that a significant proportion of UK firms appear to engage in multiple acquisitions over this period (about 30% of the merger population) and, very importantly, private targets and subsidiaries are major components of the UK takeover market (approximately 90%), a fact that very few studies have taken into account.

In general, our results demonstrate that acquiring firms earn positive abnormal returns only in the short-run. More specifically, they gain significantly when buying private and/or subsidiary targets and break even when taking over public targets. This finding is to a great extent consistent with Fuller et al. Our short-run findings are robust after controlling for relative size, bidder's book-to-market ratio, target origin, and industry diversification effects. For the long-run analysis, however, our results show that bidders experience significant losses regardless of the type of target acquired. Overall, our findings imply that the stock market may initially overreact to a takeover event in the short-run but prices are gradually corrected in the long-run. Hence, our evidence raises a big question mark towards Fuller et al.'s conclusion as the short-run economic gains of buying private and subsidiary targets cannot be materialized in the long-run.

The remainder of this paper is organized as follows: Section 2 describes the data and the methodology. Sections 3 and 4 report and interpret the empirical findings. Section 5 concludes the paper.

2. DATA AND METHODOLOGY

(i) Data

We examine a sample of successful acquisitions by UK public firms that acquire domestic and/or foreign targets between 1987 and 2004. The sample is drawn from the Securities Data Corporation's (SDC) Mergers and Acquisitions database.[4] The following criteria are used in our sample selection.

1. Acquirers are UK firms publicly traded on the London Stock Exchange (LSE) and have at least five days of return data around the takeover announcement for short-run analysis, and one- to three-year return data for the long-run analysis available from the Thomson Financial Datastream.
2. The acquirer completes three or more bids within three years of the first acquisition during the sample period.
3. The bidder acquires at least 50% of the target's shares as a result of the takeover.
4. The target is a public, private, or subsidiary firm.
5. The deal value is one million US dollars or more.[5]
6. Neither the targets, nor the bidders are financial or utility firms (following Fama and French, 1992).

4 SDC is a commercial database that includes information on UK takeover bids since 1980. However, prior to 1987, there is very limited data available from the SDC for UK mergers and acquisitions.

5 We employ a one-million US dollars cut-off point to avoid results being generated by very small deals. Similarly, studies like Fuller, Netter and Stegemoller (2002), Moeller, Schlingemann and Stulz (2004) in the US use a cut-off point of one million dollars.

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There are 4,133 bids that meet the above mentioned criteria. Further, we require that the deal value represents at least 5% of the acquirer's market capitalisation one month prior to the acquisition announcement.[6] This ensures that only economically significant deals are examined as relatively small and insignificant observations would only add noise to the analysis. We also exclude clustered acquisitions where the bidder acquires two or more firms within five days in order to isolate the overlapping effect among the bidder returns. Therefore, our final sample consists of 319 unique acquirers initiating 1,401 bids. For the long-run analysis, the sample is comprised of 1,144, 1,110 and 1,061 acquisitions for one-, two- and three-year analysis, respectively. Following Conn, Cosh, Guest and Hughes (2005), the full sample is then divided into two sub-samples based on the method of payment used in the transaction: all-cash and non-cash (i.e., any other type of offer), respectively.[7]

Table 1 presents summary statistics for acquirers making multiple acquisitions and their relevant targets. Panel A presents merger activity by the type of target and mode of payment. The acquirer's market capitalization equals the price per share one-month prior to the bid announcement times the number of common shares outstanding. The target's firm size is measured as the deal value of the bid at the announcement. For the entire sample in Panel A, the mean (median) size of the acquirer is 284.24 million pounds (52.09 million pounds) for 319 unique acquirers, while for 1,401 targets the mean (median) size is 63.81 million pounds (9.20 million pounds). An interesting result that emerges from the sample statistics is that a large fraction of UK acquirers (about 90%) engage in non-public deals. Further, Panel A illustrates that the mean (median) size is 300.87 million pounds (56.77 million pounds) for 145 unique public targets. Private targets mean (median) size is much smaller than that of public targets; more specifically, 19.23 million pounds (6.41 million pounds) for 764 private targets. Finally, the mean (median) size of 492 subsidiary targets is also smaller (63.18 million pounds (11.40 million pounds)) than that of public targets. Overall, Panel A shows that the size of public acquisitions is significantly larger than the size of acquisitions involving private and/or subsidiary targets. Panel B reports statistics on the financing characteristics of the sample by year. It reflects that a large proportion of deals are all-cash offers. Particularly, 40% of the payments are all-cash offers for acquisitions of public and private targets and 68% for subsidiaries.

(i) Methodology

For the short-run analysis, we follow Fuller, Netter and Stegemoller (2002) and Dong, Hirshleifer, Richardson and Teoh (2006) standard event study methodology and calculate Cumulative Abnormal Returns (CARs) for the five-day (−2, +2) period around the takeover announcement. More specifically, we estimate the abnormal returns by using a modified market-adjusted model:

$$\mathrm{AR}_{it} = R_{it} - R_{mt} \tag{1}$$

6 The same criterion was applied by Morck, Shleifer and Vishny (1990).

7 Although in the US the method of payment is normally classified as cash, stock and mixed offers, it would be problematic to simply follow this definition in the UK. Because of the City Code, the UK is institutionally different to the US, more specifically, the cash alternative requirements in the City Code effectively make many offers 'mixed' though in spirit they are equity offers (Limmack, 2003).

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Table 1

Sample Statistics: Mean and Median Size of Acquirers and Targets by Form of Payment and Target Ownership Status and Financing Characteristics by Year

Panel A: Acquirer and Target Mean and Median Size by Form of Payment and Target Ownership Status

Type of Acquisition	*Number of Acquisitions*	*% of Total Number of Acquisitions*	*Mean Acquirer Market Equity (£mln)*	*Median Acquirer Market Equity (£mln)*	*Mean Target Market Equity (£mln)*	*Median Target Market Equity (£mln)*
Public	145	10.35	956.61	133.02	300.87	56.77
Private	764	54.53	122.90	41.22	19.23	6.41
Subsidiary	492	35.12	336.62	126.20	63.18	11.40
All-Cash	700	49.96	326.49	60.58	60.64	10.00
Non-Cash	701	50.04	231.46	45.94	112.01	8.50
Public/All-Cash	58	40.00	1176.99	227.43	240.44	68.34
Public/Non-Cash	87	60.00	754.92	109.12	340.06	53.70
Private/All-Cash	307	40.18	130.61	41.60	17.34	5.80
Private/Non-Cash	457	59.82	133.72	40.95	19.64	7.00
Subsidiary/All-Cash	335	68.09	358.74	76.95	69.20	13.85
Subsidiary/Non-Cash	157	31.91	200.63	43.65	57.42	8.30
Total (319 Unique Bidders)	**1401**	**100**	**284.24**	**52.09**	**63.81**	**9.20**

Table 1 (Continued)

Panel B: Financing Characteristics by Year

Year	Number of Firms with Disclosed Method of Payment	Public				Private				Subsidiary			
		All-Cash		Non-Cash		All-Cash		Non-Cash		All-Cash		Non-Cash	
		N	%	N	%	N	%	N	%	N	%	N	%
1987	57	3	33	6	67	22	65	12	35	11	79	3	21
1988	111	8	73	3	27	40	59	28	41	26	81	6	19
1989	88	8	47	9	53	24	53	21	47	18	69	8	31
1990	65	2	50	2	50	17	59	12	41	24	75	8	25
1991	58	2	40	3	60	10	38	16	62	22	81	5	19
1992	44	-	-	1	100	9	41	13	59	12	57	9	43
1993	57	2	40	3	60	10	45	12	55	19	63	11	37
1994	58	3	43	4	57	7	23	23	77	13	62	8	38
1995	51	1	12	8	88	12	44	15	56	9	60	6	40
1996	80	2	22	7	78	12	28	31	72	19	68	9	32
1997	120	4	36	7	64	30	40	45	60	21	62	13	38
1998	133	8	53	7	47	35	51	34	49	36	73	13	27
1999	134	7	35	13	65	25	40	38	60	36	71	15	29
2000	142	6	43	8	57	21	30	50	70	34	60	23	40
2001	81	1	25	3	75	9	17	43	83	12	48	13	52
2002	49	1	100	-	-	12	31	27	60	5	56	4	44
2003	37	-	-	3	100	7	32	15	68	11	92	1	8
2004	36	-	-	-	-	5	19	22	81	7	78	2	22
Total	**1,401**	**58**	**40**	**87**	**60**	**307**	**40**	**457**	**60**	**335**	**68**	**157**	**32**

Notes:
The table presents in Panel A the number of acquisitions and the percentage of total number of acquisitions by form of payment and target ownership status and the mean and median market value of acquirers and targets. The summary statistics are provided on the basis of a sample of 1,401 acquisitions from 1987 to 2004 undertaken by 319 unique bidders. Acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Targets include both domestic and foreign public, private and subsidiary firms. The mean and median size for each acquirer and each target is the firm size at the year the deal was announced. The acquirer's market capitalization equals the price per share one-month prior to the bid announcement times the number of common shares outstanding. The target's firm size is measured as the deal value of the bid. The samples are further divided into two sub-samples based on the method of payment used in the transaction, i.e., all-cash, and non-cash (i.e., any other type of offer). Panel B represents financing characteristics by year for acquisitions of public, private and subsidiary firms undertaken by UK multiple bidders.

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where, R_{it} is the return on firm i and R_{mt} is the value-weighed market index return.[8] This approach amounts to assuming that $\alpha = 0$ and $\beta = 1$ for the firms in our sample.[9] The t-statistics are estimated using the cross-sectional variation of abnormal returns.

Since our sample consists of multiple acquirers, it is obvious that in the long-run analysis subsequent acquisitions will take place by the same bidder within the 36-month event window. We therefore follow Lyon, Barber and Tsai (1999) and Mitchell and Stafford (2000) and use Calendar Time Abnormal Returns (CTARs) to control for the problem of cross-sectional dependence of sample observations:[10]

$$\text{CTAR}_{i,t} = R_{it} - E(R_{cpi,t}) \tag{2}$$

where R_{it} is the monthly return for each security, and $E(R_{cpi,t})$ is the expected return of the event control portfolio assigned to each security. The expected return of the event portfolio is proxied by the 25 size and B/M reference portfolios.[11] In each calendar month t, a portfolio is formed by including all stocks with an acquisition event during the past 12, 24, or 36 months.

The portfolio is rebalanced every month by including new event firms that executed a transaction in the previous month and disregard those that have completed one- to three-years in the calendar approach. For each calendar month t we calculate a mean return ($\overline{\text{CTAR}_t}$) across the firms:

$$\overline{\text{CTAR}_t} = \sum_{i=1}^{N_t} \frac{1}{N_t} \text{CTAR}_{i,t} \tag{3}$$

where N_t is the number of firms in the calendar month t. We then compute a grand mean monthly abnormal return (MCTAR):

$$\text{MCTAR} = (1/T) \sum_{t=1}^{T} \overline{\text{CTAR}_t} \tag{4}$$

where T is the total number of calendar months. To test the null hypothesis of zero mean monthly abnormal returns, we adopt the approach of Lyon, Barber and Tsai (1999), and a t-statistic is calculated using the time-series standard deviation of the mean monthly abnormal returns.

8 We use the return index (RI) from Datastream that incorporates dividends in the calculation of returns.
9 We do not estimate market parameters based on a time period before each bid, since for frequent acquirers there is a high probability that previous takeover attempts would be included in the estimation period, hence making beta estimations less meaningful. Additionally, it has been shown that for short window event studies, weighting the market return by the firm's beta does not significantly improve estimation (Brown and Warner, 1980).
10 We do not employ the Calendar Time Portfolio Regression (CTPR) approach by using the Fama-French three-factor model as Mitchell and Stafford (2000) underline the joint-test problem of SMB and HML factors for a US sample. Moreover, Lyon et al. (1999) raise the non-linearity problem for size and book-to-market factors. Gregory, Harris and Michou (2003) also present evidence suggesting that the size and book-to-market factors do not altogether represent risk factors in the UK.
11 In June of each year t we sort all qualifying UK stocks listed on Datastream following Fama and French (1993) criteria according to their market capitalization and thus form five quintile portfolios. Independently, we also sort all stocks according to their book-to-market ratios in December of year $t-1$, and form five portfolios. We calculate the returns of the 25 portfolios that are rebalanced yearly. We then assign each sample firm a control portfolio (comprising any of non-merging firms within the preceding or subsequent 3 years) based on its market capitalization and book-to-market ratio from July of year t to June of year $t+1$.

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Table 2
Cumulative Abnormal Returns (CARs) of Frequent Acquirers

	All	*All-Cash All Bids*	*Non-Cash*
All Acquirers	1.26%[a]	0.76%[a]	1.76%[a]
	1401	700	701
Public Targets	−0.62%	0.18%	−1.15%
	145	58	87
Private Targets	1.59%[a]	0.46%	2.34%[a]
	764	307	457
Subsidiary Targets	1.31%[a]	1.13%[a]	1.67%[a]
	492	335	157

Notes:
The table presents 5-day [−2, +2] Cumulative Abnormal Returns (CARs) around the acquisition announcement for bidders acquiring three and/or more public, private, and/or subsidiary targets within a three-year period between 1987 and 2004. Abnormal returns are calculated using a modified market-adjusted model:

$$AR_{it} = R_{it} - R_{mt}$$

where R_{it} is the return on firm i and R_{mt} is the value weighed Market Index Return (FT-All Share). All acquirers are public firms listed on the London Stock Exchange (LSE). The results are further partitioned by the all-cash and non-cash (i.e., any other type of offer) methods of payment. The number of bids is reported below the mean.
[a] Denotes significance at the 1% level.
[b] Denotes significance at the 5% level.
[c] Denotes significance at the 10% level.

3. EMPIRICAL RESULTS FOR THE SHORT-RUN ANALYSIS

(i) Bidder Abnormal Returns by Target Type and Method of Payment

Table 2, Panel A, presents five-day CARs for the full sample classified by target public status and method of payment. For all bids, the CAR is positive (1.26%) and statistically significant at the 1% significance level. When focusing on public targets we obtain a statistically insignificant CAR of –0.62%. This is consistent with many empirical studies on public acquisitions reporting that bidders break even at the acquisition announcement.[12] Further, this result remains unchanged after controlling for the method of payment.

For acquisitions of private targets, bidders earn a significant positive CAR (1.59%). This is in line with Ang and Kohers (2001), Fuller et al. (2002), and Draper and Paudyal (2006) who document substantial gains for acquisitions of privately held firms. Private firms exhibit concentrated ownership which leads to less agency conflicts. The nature of private targets itself 'auto-protects' the acquiring firm from managers' empire building incentives, since such acquisitions do not offer, in most cases, the prestige they pursue. Private firms with low liquidity cannot be bought and sold as easily as public firms. Hence, in order to create an attractive image and a plausible incentive as a profitable investment opportunity for potential acquirers, private firms normally offer their shares at a discount (*the liquidity discount*). Several studies argue that there is limited

12 See for example, Jensen and Ruback (1983), Jarrell, Brickley and Netter (1988) and Limmack (1991).

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competition for private targets, a fact that favours acquirers to buy undervalued targets because the bargaining power of managers is high *(limited competition hypothesis)*. In addition, it is highly likely that the acquisitions of smaller, less known targets, for which information available to investors is scarce, will be mainly motivated by maximising potential synergies (*managerial motive hypothesis*).[13] Further, we show that public firms acquiring subsidiary targets also experience significant gain (1.31%), a result that is not altered by the alternative financing methods.

(ii) Bidder Abnormal Returns by Deal Order

According to the literature, frequent bidders become more experienced when undertaking many acquisitions and therefore the number and order of acquisitions can have a positive impact on performance. On the other hand, Fuller et al. (2002), among others, suggest that the later deals, lead to a deteriorating performance, as managers do not have enough time to evaluate the synergies and also negotiate in an efficient manner.[14]

To test the above propositions, Table 3 examines the performance of frequent acquirers by deal order.[15] More specifically, we examine the performance of only the first deals and compare them to that of the second (third, fourth, fifth) and/or more deals. We find that for the full sample frequent acquirers earn a significant positive CAR of 1.66% in their first bids, while returns for the 'fifth and/or higher' deals appear to be negative and insignificant (−0.10%). This inverse relationship between the order of acquisition deals and abnormal returns holds also for private and subsidiary targets that account for the majority of the entire sample. Therefore, the lower abnormal returns for higher order deals suggest that the acquisition performance of multiple bidders is less likely to be driven by experience.

(iii) Bidder Abnormal Returns for Only Public, Only Private, and Only Subsidiary Acquisitions

Our results, so far, suggest that the market perceives bids for private and subsidiary firms in a different way to those for public firms. According to Fuller et al., this may be due to either a difference in synergies between acquisitions of public, private, and/or subsidiary targets or in the division of gains from the bid. However, one may argue that the results are subject to a potential overlapping observations' problem. In other words, a bidder that acquires all (or at least two) types of targets will appear independently in each sub-analysis. In order to control for this potential problem, we examine bidder returns for only public, only private, and only subsidiary targets.

13 For explanations on these hypotheses, see for example, Chang (1998) and Draper and Paudyal (2006).
14 The deteriorating performance of later deals in a series of mergers and acquisitions by the same bidder could also be attributed to the hubris/overconfidence hypothesis (Roll, 1986). This could manifest itself a less careful choice of targets, a higher price paid for those targets, or higher leverage being taken on to pay for subsequent acquisitions. Doukas and Petmezas (2007) suggest that overconfident acquirers (managers), described as firms engaged in many acquisitions during a short span of time, credit their initial success to their own ability and as a consequence they exhibit worse performance at the announcement compared to 'rational' acquirers and poor long-term returns.
15 While we have 319 unique bidders (see Table 1), there are 333 first bids. This is due to the fact that a unique bidder may conduct 3 and/or more bids within a different 3-year window over the period 1987–2004.

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Table 3

Cumulative Abnormal Returns of Frequent Acquirers: 1st Deals and Later Deals

	All	*Public*	*Private*	*Subsidiary*
Multiple Acquirers: 1st Deals	1.66%[a]	−0.90%	2.06%[a]	1.86%[a]
	333	38	184	111
Multiple Acquirers: 2nd and/or More Deals	1.14%[a]	−0.52%	1.44%[a]	1.14%[a]
	1068	107	580	381
Multiple Acquirers: 3rd and/or More Deals	1.04%[a]	−0.45%	1.38%[a]	1.09%[a]
	729	75	392	262
Multiple Acquirers: 4th and/or More Deals	0.47%	−0.04%	0.22%	0.93%[b]
	319	27	169	123
Multiple Acquirers: 5th and/or More Deals	−0.10%	−0.16%	−0.10%	−0.08%
	155	11	94	50

Notes:

This table presents the 5-day [−2, +2] Cumulative Abnormal Returns (CARs) by deal order around the acquisition announcement of acquirers acquiring three and/or more public, private, and/or subsidiary firms between 1987 and 2004. Deal order is based on the number of acquisitions multiple acquirers announced within a 3-year period: 1st deals, 2nd, 3rd, 4th and 5th and/or more deals, respectively. Abnormal Returns are estimated using a modified market-adjusted model:

$$\mathrm{AR}_{it} = R_{it} - R_{mt}$$

where R_{it} is the return on firm i and R_{mt} is the value-weighed Market Index Return (FT-All Share). All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). The results are further partitioned by the all-cash and non-cash (i.e., any other type of offer) methods of payment. The number of bids is reported below the mean.

[a] Denotes significance at the 1% level.

[b] Denotes significance at the 5% level.

[c] Denotes significance at the 10% level.

Table 4 explicitly reports CARs for only-public, only-private, and only-subsidiary acquisitions. This research design is of significant importance because it focuses on bidders acquiring only one type of target and, hence, excludes any potential contaminating effects that may arise when examining bidders buying all types of targets within a 3-year event window. Consequently, results from this analysis reflect a 'pure' wealth effect on bidders that have exclusively bought only one type of target. We find that CARs to bidders acquiring only private or only subsidiary targets are positive and significant (1.54% and 0.91% respectively), while insignificant for acquisitions of public firms. This indicates that our return pattern documented in Table 2 is robust even after controlling for a potential overlapping observations' problem.

(iv) Bidder Abnormal Returns by Relative Size and Method of Payment

It is likely that the market reaction to the bidder of a private acquisition is weaker than a public acquisition due to the small size of private targets. In particular, the larger the target relative to the bidder, the stronger the target's negotiating power and ability to benefit from the transaction. Alternatively, bidding firms may find it more difficult to integrate larger public targets into their business due to the higher regulatory costs involved. In addition, there are fundamental differences in the division of gains and/or synergies between takeovers involving public and private targets, and these differences are magnified the greater the relative size of the merger. Therefore, we control for

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Table 4

Cumulative Abnormal Returns (CARs) of Frequent Acquirers for Only Public, Only Private, and Only Subsidiary Targets

	All	*All-Cash*	*Non-Cash*
Panel A: Firms Acquiring only Public Targets			
Bids for Public Targets	−0.57%	−3.56%	0.03%
	6	1	5
Panel B: Firms Acquiring only Private Targets			
Bids for Private Targets	1.54%[a]	0.25%	2.15%[a]
	283	90	193
Panel C: Firms Acquiring only Subsidiary Targets			
Bids for Subsidiary Targets	0.91%[c]	1.23%[c]	0.27%
	77	51	26

Notes:
The table presents 5-day [−2, +2] Cumulative Abnormal Returns (CARs) around the acquisition announcement for bidders acquiring one type of three and/or more public, private, or subsidiary targets within a three-year period between 1987 and 2004. Abnormal returns are calculated using a modified market-adjusted model:

$$\mathrm{AR}_{it} = R_{it} - R_{mt}$$

where R_{it} is the return on firm i and R_{mt} is the value weighed Market Index Return (FT-All Share). All acquirers are public firms listed on the London Stock Exchange (LSE). Panels A, B and C contain bidders acquiring only public firms, bidders acquiring only private firms, and bidders acquiring only subsidiary firms, respectively. The results are further partitioned by the all-cash and non-cash (i.e., any other type of offer) methods of payment. The number of bids is reported below the mean.
[a] Denotes significance at the 1% level.
[b] Denotes significance at the 5% level.
[c] Denotes significance at the 10% level.

the effect of target size on bidder returns by sorting bidders according to their relative size.[16]

Table 5, Panel A, reports the results for the entire sample. We find that CARs are in general positively related to the relative size of the overall sample and of all-cash and non-cash payments respectively. This is consistent with Asquith, Bruner and Mullins (1983), Jensen and Ruback (1983) and Kang (1993) who find that abnormal returns increase with the relative size of target to bidder. In addition, Fuller et al. (2002) identify a similar pattern to our evidence for a sample of US acquisitions. In Panel B for public targets, CARs become statistically insignificant as the relative size increases. Results for private targets and subsidiaries (Panels C and D) are similar to those obtained in Panel A for the entire sample and demonstrate that returns are positive and significant with the increase of the relative size.

(v) Abnormal Returns by Book-to-Market Ratio and Method of Payment

It has been acknowledged in the literature that the book-to-market ratio of acquiring firms is related to the announcement returns, as it conveys important information

16 The relative size of target to bidder is defined as the deal value divided by bidder market value one month prior to the acquisition announcement.

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Table 5

Cumulative Abnormal Returns (CARs) of Frequent Acquirers by the Relative Size of the Target

	All	*All-Cash*	*Non-Cash*
Panel A: All Bids			
5%-9.99%	0.99%[a]	0.60%[b]	1.44%[a]
	482	256	226
10%-14.99%	0.97%[b]	0.59%[a]	1.45%[b]
	225	127	98
15%-29.99%	1.27%[a]	0.71%	1.83%[a]
	326	163	163
≥30%	1.78%[a]	1.22%[b]	2.19% [a]
	368	154	214
Panel B: Public			
5%-9.99%	−1.22%[c]	−0.82%	−1.98%
	20	13	7
10%-14.99%	0.26%	−0.05%	0.68%
	21	12	9
15%-29.99%	−0.12%	1.76%	−0.95%
	36	11	25
≥30%	−0.98%	0.10%	−1.49%
	68	22	46
Panel C: Private			
<5%-9.99%	1.23%[a]	−0.01%	2.07%[a]
	300	122	178
10%-14.99%	0.83%	0.17%	1.47%[c]
	128	63	65
15%-29.99%	1.46%[a]	0.39%	2.35%[a]
	172	78	94
≥30%	2.96% [a]	2.31%[b]	3.21% [a]
	164	44	120
Panel D: Subsidiary			
5%-9.99%	0.83%[b]	1.37%[a]	−0.75%
	162	121	41
10%-14.99%	1.38%[b]	1.25%[b]	1.67%
	76	52	24
15%-29.99%	1.40%[b]	0.88%	2.29%[b]
	118	74	44
≥30%	1.74%[a]	0.96%	3.17%[b]
	136	88	48

Notes:

The table presents 5-day [−2, +2] Cumulative Abnormal Returns (CARs) around the acquisition announcement for bidders acquiring three and/or more public, private, and/or subsidiary targets within a three-year period between 1987 and 2004. Abnormal returns are calculated using a modified market-adjusted model:

$$\mathrm{AR}_{it} = R_{it} - R_{mt}$$

where R_{it} is the return on firm i and R_{mt} is the value weighed Market Index Return (FT-All Share). All acquirers are public firms listed on the London Stock Exchange (LSE). All acquirers are public firms listed on the London Stock Exchange (LSE). Panel A represents all bids, Panels B to D represent public, private, and subsidiary, respectively. The relative size of the target is defined as the deal value divided by acquirer market value. The acquirer market value (MV) is calculated one month prior to the announcement date and is the product of the monthly share price multiplied by the number of ordinary shares on Datastream. The results are further partitioned by the all-cash and non-cash (i.e., any other type of offer) methods of payment. The number of bids is reported below the mean.

[a] Denotes significance at the 1% level.

[b] Denotes significance at the 5% level.

[c] Denotes significance at the 10% level.

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about past and potential future bidder's stock performance. Rau and Vermaelen (1998) suggest that glamour acquirers (i.e., acquirers with low book-to-market ratio) outperform value ones (i.e., acquirers with high book-to-market ratio) in the short-run. It appears that the market fails to understand that past managerial performance is not necessarily a good indicator of future performance, at least in the case of acquisitions. We therefore examine whether the return patterns obtained in Table 2 remain the same after accounting for any potential book-to-market effect.

Table 6, Panel A, reports the CARs of value (high B/M) acquirers. We find a significant positive CAR (1.44%) for all acquirers.[17] When the sample is divided by method of payment all CARs remain positive and statistically significant. For public, private, and subsidiary target sub-samples, the return pattern remains the same as for the full sample in Table 2. Bidder returns (−1.12%) are insignificant when buying public firms, while significant gains are enjoyed when buying private (1.85%) and subsidiary (1.54%) targets. Taking into account the alternative methods of payment does not alter this result. Panel B reports CARs for glamour (low B/M) acquirers and shows to a great extent the same return pattern with Panel A.

(vi) Abnormal Returns by Domestic/Foreign Targets and Method of Payment

It has been documented in the literature that the domicile of the target plays a major role in determining acquirer performance.[18] Doukas and Travlos (1988) argue that acquisitions of non-domestic targets serve as a diversification 'vehicle' enabling the expansion of the boundary of the acquiring firm and therefore lead to better performance. This expansion permits the internalization of synergies that would otherwise be missed because of various market failures.

Thus it is important to examine the target origin since one may argue that our main results are biased by the initial selection of the sample including both domestic and foreign targets. Table 7 presents CARs for bidders acquiring domestic (UK) or foreign (non-UK) targets. Panel A reports results for domestic acquisitions which again mirror the previous finding obtained for the full sample in Table 2. The CARs for public targets are insignificant, while bidders earn positive and statistically significant returns when they acquire private targets (1.70%) and subsidiaries (1.09%). For cross-border acquisitions, Panel B virtually reports the same pattern as Panel A. This is consistent with Gregory and McCorriston (2005) who find statistically insignificant negative abnormal returns surrounding the announcement for UK cross-border public acquisitions. Overall, results reported in Table 7 confirm, to a major extent, the return pattern documented in Table 2.

(vii) Abnormal Returns by Diversified/Focused Targets and Method of Payment

Previous evidence suggests that corporate diversification affects shareholders' wealth. Jensen and Ruback (1983), Bradley, Desai and Kim (1988), Billett and Mauer (2000)

17 Note that the number of observations does not sum to the total sample (1,401 compared to 1,235 acquisitions) due to unavailable data from the Datastream database (166 firms). The missing sub-sample (available upon request from the authors) generates returns substantially below the ones of the sub-samples reported in Table 6.

18 See for example, Doukas and Travlos (1988), Kang (1993), Eun, Kolodny and Scheraga (1996), Fatemi and Furtedo (1998), Goergen and Renneboog (2004), Gregory and McCorriston (2005) and Conn, Cosh, Guest and Hughes (2005).

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Table 6

Cumulative Abnormal Returns (CARs) of Frequent Acquirers by the Book-to-Market (B/M) Ratio

	All	*All-Cash*	*Non-Cash*
Panel A: High B/M (Value Acquirers)			
All Acquirers	1.44%[a]	1.09%[a]	1.89%[a]
	583	326	257
Public Targets	−1.12%	−0.77%	−1.30%
	55	19	36
Private Targets	1.85%[a]	0.84%[c]	2.84%[a]
	289	142	147
Subsidiary Targets	1.54%[a]	1.52%[a]	1.57%[b]
	239	165	74
Panel B: Low B/M (Glamour Acquirers)			
All Acquirers	1.45%[a]	0.83%[b]	1.86%[a]
	652	261	391
Public Targets	−0.40%	0.68%	−1.25%
	75	33	42
Private Targets	1.71%[a]	0.42%	2.22%[a]
	389	109	280
Subsidiary Targets	1.64%[a]	1.24%[a]	2.32%[b]
	188	119	69

Notes:

The table presents 5-day [−2, +2] Cumulative Abnormal Returns (CARs) around the acquisition announcement for bidders acquiring three and/or more public, private, and/or subsidiary targets within a three-year period between 1987 and 2004. Abnormal returns are calculated using a modified market-adjusted model:

$$\mathrm{AR}_{it} = R_{it} - R_{mt}$$

where R_{it} is the return on firm i and R_{mt} is the value weighed Market Index Return (FT-All Share). All acquirers are public firms listed on the London Stock Exchange (LSE). Panel A reports the results for value acquirers. Panel B represents the results for glamour acquirers. Value acquirers are defined as those with high book-to-market ratio, while glamour acquirers are defined as those with low book-to-market ratio. Acquirer's book-to-market ratio is calculated one month prior to the acquisition announcement date and is the product of the net book value divided by the Market Value. The results are further partitioned by the all-cash and non-cash (i.e., any other type of offer) methods of payment. The number of bids is reported below the mean.

[a] Denotes significance at the 1% level.

[b] Denotes significance at the 5% level.

[c] Denotes significance at the 10% level.

and Hadlock, Ryngaert and Thomas (2001) find that the announcement of diversifying acquisitions are generally associated with small positive abnormal returns. However, many studies also provide evidence that diversification may diminish shareholders' wealth (e.g., Lang and Stulz, 1994; Berger and Ofek, 1995; and Servaes, 1996; and Doukas and Kan, 2004). Fuller et al. (2002) examine the diversification effect of bidders acquiring subsidiary targets. They argue that the reason firms sell a subsidiary is to gain from the increased focus. However, they find weak evidence that diversified firms sell subsidiaries at a discount relative to focused deals.

Table 8 reports the results of diversifying and focused acquisitions for public, private and/or subsidiary targets. A diversified firm is defined as a bidder whose 3-digit SIC

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Table 7

Cumulative Abnormal Returns (CARs) of Frequent Acquirers by the Target Origin (Domestic vs Foreign)

	All	*All-Cash*	*Non-Cash*
Panel A: Domestic Targets			
All Acquirers	1.24%[a]	0.80%[a]	1.64%[a]
	1022	484	538
Public Targets	−0.58%	1.12%	−1.39%
	109	35	74
Private Targets	1.70%[a]	0.54%	2.39%[a]
	550	205	345
Subsidiary Targets	1.09%[a]	0.96%[a]	1.36%[b]
	363	244	119
Panel B: Foreign Targets			
All Acquirers	1.31%[a]	0.68%[c]	2.14%[a]
	379	216	163
Public Targets	−0.73%	−1.26%	0.21%
	36	23	13
Private Targets	1.29%[b]	0.30%	2.20%[a]
	214	102	112
Subsidiary Targets	1.90%[a]	1.59%[a]	2.64%[b]
	129	91	38

Notes:
The table presents 5-day [−2, +2] Cumulative Abnormal Returns (CARs) around the acquisition announcement for bidders acquiring three and/or more public, private, and/or subsidiary targets within a three-year period between 1987 and 2004. Abnormal returns are calculated using a modified market-adjusted model:

$$\mathrm{AR}_{it} = R_{it} - R_{mt}$$

where R_{it} is the return on firm i and R_{mt} is the value weighed Market Index Return (FT-All Share). All acquirers are public firms listed on the London Stock Exchange (LSE). Panel A reports the results for value acquirers. Panel B represents the results for glamour acquirers. Value acquirers are defined as those with high book-to-market ratio, while glamour acquirers are defined as those with low book-to-market ratio. Acquirer's book-to-market ratio is calculated one month prior to the acquisition announcement date and is the product of the net book value divided by the Market Value. The results are further partitioned by the all-cash and non-cash (i.e., any other type of offer) methods of payment. The number of bids is reported below the mean.
[a] Denotes significance at the 1% level.
[b] Denotes significance at the 5% level.
[c] Denotes significance at the 10% level.

code is different from that of the target firm.[19] For diversifying acquisitions, Panel A presents a similar finding as the one obtained from the overall sample in Table 2. The CARs are positive and significant for the full sample (1.26%) and for private targets and subsidiaries (1.66% and 1.12% respectively), while insignificant for public

19 Servaes (1996) points out that a straightforward examination of the 4-digit SIC codes of the segments of the firm does not necessarily reveal the degree of diversification of the firm. He argues that the use of the 4-digit SIC code would be too wide to identify the industrial structure of the firm. Similarly, Kahle and Walkling (1996) demonstrate how a 4-digit SIC code firm assigned to a firm might be misleading with regard to the most.

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Table 8

Cumulative Abnormal Returns (CARs) of Frequent Acquirers by Diversifying/Focused Acquisitions

	All	*All-Cash*	*Non-Cash*
Panel A: Diversifying Acquisitions			
All Acquirers	1.26%[a]	0.64%[a]	1.92%[a]
	911	473	438
Public Targets	−0.25%	−0.01%	−0.42%
	101	42	59
Private Targets	1.66%[a]	0.53%	2.47%[a]
	483	201	282
Subsidiary Targets	1.12%[a]	0.84%[a]	1.77%[a]
	327	230	97
Panel B: Focused Acquisitions			
All Acquirers	1.27%[a]	1.02%[b]	1.48%[b]
	490	227	263
Public Targets	−1.47%	0.64%	−2.68%
	44	16	28
Private Targets	1.46%[a]	0.33%	2.14%[a]
	281	106	175
Subsidiary Targets	1.68%[a]	1.77%[a]	1.51%
	165	105	60

Notes:
The table presents 5-day [−2, +2] Cumulative Abnormal Returns (CARs) around the acquisition announcement for bidders acquiring three and/or more public, private, and/or subsidiary targets within a three-year period between 1987 and 2004. Abnormal returns are calculated using a modified market-adjusted model:

$$\mathrm{AR}_{it} = R_{it} - R_{mt}$$

where R_{it} is the return on firm i and R_{mt} is the value weighed Market Index Return (FT-All Share). All acquirers are public firms listed on the London Stock Exchange (LSE). Panel A reports the results for value acquirers. Panel B represents the results for glamour acquirers. Value acquirers are defined as those with high book-to-market ratio, while glamour acquirers are defined as those with low book-to-market ratio. Acquirer's book-to-market ratio is calculated one month prior to the acquisition announcement date and is the product of the net book value divided by the Market Value. The results are further partitioned by the all-cash and non-cash (i.e., any other type of offer) methods of payment. The number of bids is reported below the mean.
[a] Denotes significance at the 1% level.
[b] Denotes significance at the 5% level.
[c] Denotes significance at the 10% level.

targets. Bidder returns when buying public targets are also insignificant regardless of the method of payment used (all-cash or non-cash), while private targets earn significant gains (2.47%) under non-cash offers. Panel B reports results for focused acquisitions which are relatively similar to Panel A. More specifically, we obtain again significantly positive abnormal returns for the overall sample and for acquisitions of private and subsidiary targets (1.46% and 1.68% respectively), and insignificant CARs for public acquisitions. Therefore, as a whole, we conclude that our general findings are robust after controlling for the diversification effect.

To sum up, our short-run analysis by examining a UK sample confirms to a great extent the general results reported by Fuller et al. (2002) that acquirers gain significantly when buying private and subsidiary targets. Our additional evidence, after

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controlling for relative size, book-to-market, target origin, and industry diversification further supports these findings. Based on the short-run results alone, one can conclude, like Fuller et al. (2002), that buying private and subsidiary firms creates value for bidder shareholders. However, our major doubts lie on the ability of the 5-day event study to isolate the real economic gains from market mispricing as both are 'observationally equivalent'. To confirm the above conclusion, we must investigate whether the same results remain in the long-run. We thus take a step further to examine the long-run (one- to three-year) stock performance in order to verify the short-run conclusion.

4. EMPIRICAL RESULTS FOR THE LONG-RUN ANALYSIS

(i) Bidder Abnormal Returns by Target Type and Method of Payment

Table 9 presents the one- to three-year calendar-time abnormal returns (CTARs). For the 3-year period (Panel C), we obtain negative and significant monthly abnormal returns (−0.43%) for the entire sample.[20] This finding suggests that acquirers lose, on average, three years after the acquisition. Since we have found strong evidence that bidders earn positive and significant abnormal returns when they acquire private and subsidiary targets in the short-run, we are interested in investigating whether such gains persist in the post-event period. We find that, for both private targets and subsidiaries, monthly abnormal returns are negative and significant (−0.39% and −0.36% respectively). This evidence, hence, stands in sharp contrast with the short-run results which indicate that private targets and subsidiaries gain from acquisitions. Our results for the two-year (Panel B) post-event window report virtually the same pattern with the three-year findings (Panel C). As a whole, Table 9 shows that, in general, frequent acquirers destroy shareholders' value in the long-run irrespective of the target ownership status.

(ii) Bidder Abnormal Returns for Only Private and Only Subsidiary Targets

We subsequently conduct a robustness test to further enhance the above evidence. The research design follows the one employed in Section 3 *(iii)* for the short-run analysis in order to exclude potential contaminating effects of bidders buying all types of targets within a 3-year period. Multiple acquirers were initially defined as bidders that acquire three or more public and/or private targets and/or subsidiaries within a 3-year period. Therefore, the 36-month return series may be affected by inter-effects sourcing from the same bidder acquiring both public and/or private, subsidiary targets.

20 For US empirical evidence on public acquirers' long run stock returns, see for example: Asquith (1983), Malatesta (1983), Jensen and Ruback (1983), Magenheim and Mueller (1988), Agrawal, Jaffe and Mandelker (1992), Loderer and Martin (1992), Loughran and Vijh (1997), Rau and Vermaelen (1998) and Megginson, Morgan and Nail (2004). For evidence from the UK, see for example: Firth (1980), Franks and Harris (1989), Kennedy and Limmack (1996) and Gregory (1997). There are, however, other studies (e.g., Bradley and Jarrell, 1988; and Franks, Harris and Titman, 1991) that do not find significant underperformance in the three years following the merger. We are aware of very few papers examining post-acquisition performance of privately-held and subsidiary firms. Moeller, Schlingemann and Stulz (2004) find insignificant 3-year post-acquisition abnormal returns for private and subsidiary targets.

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Table 9

Mean Calendar Time Abnormal Returns (CTARs) of Frequent Acquirers

	All	*All-Cash*	*Non-Cash*
Panel A: 1 Year			
All Acquirers	−0.19%	−0.22%	0.05%
	1144	544	600
Public Targets	−0.29%	0.27%	−0.34%
	126	53	73
Private Targets	−0.06%	−0.39%	0.30%
	643	248	395
Subsidiary Targets	0.05%	0.20%	0.16%
	375	243	132
Panel B: 2 Years			
All Acquirers	−0.37%[b]	−0.02%	−0.43%[b]
	1110	527	583
Public Targets	−0.49%[c]	−0.39%	−0.77%[b]
	125	53	72
Private Targets	−0.22%	−0.03%	−0.11%
	621	241	380
Subsidiary Targets	−0.46%[c]	0.11%	−0.64%[c]
	364	233	131
Panel C: 3 Years			
All Acquirers	−0.43%[a]	−0.06%	−0.52%[a]
	1061	509	552
Public Targets	−0.55%[b]	−0.17%	−0.74%[b]
	124	52	72
Private Targets	−0.39%[c]	−0.04%	−0.37%[c]
	582	229	353
Subsidiary Targets	−0.36%[c]	−0.01%	−0.49%[b]
	355	228	127

Notes:

This table presents the Calendar Time Abnormal Returns (CTARs) to merger portfolios for bidders acquiring public, private, and/or subsidiary targets. The overall portfolio consists of 1,144, 1,110 and 1,061 successful takeover bids (for 1, 2 and 3-year analysis respectively) that took place over the period 1987-2003. We estimate the calendar time abnormal returns as follows:

$$\mathrm{CTAR}_{i,t} = R_{it} - E(R_{cpi,t})$$

where R_{it} is the monthly return of each security, and $E(R_{cpi,t})$ is the expected return on the event control portfolio assigned to each security. The expected return on the event portfolio is proxied by the 25 size and B/M reference portfolios. In each calendar month t, a portfolio is formed by including all stocks with an acquisition event during the past 12, 24, or 36 months. The portfolio is rebalanced every month by including new event firms which executed a transaction in the previous month and dropping the ones whose latest acquisition event falls out of the one- to three-year holding period. In each calendar month t we calculate a mean return $\overline{(\mathrm{CTAR}_t)}$ across the firms: $\overline{\mathrm{CTAR}_t} = \sum_{i=1}^{N_t} \frac{1}{N_t} \mathrm{CTAR}_{i,t}$ where N_t is the number of firms in the calendar month t. We then calculate a grand mean monthly abnormal return (MCTAR): $\mathrm{MCTAR} = (1/T) \sum_{t=1}^{T} \overline{\mathrm{CTAR}}_t$. Statistical significance is calculated by using the time-series standard deviation of the mean monthly abnormal returns. The results are further partitioned by the all-cash and non-cash (i.e., any other type of offer) methods of payment. The number of firms is reported below the mean CTARs.

[a] Denotes significance at the 1% level.

[b] Denotes significance at the 5% level.

[c] Denotes significance at the 10% level.

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Table 10

Mean Calendar Time Abnormal Returns (CTARs) of Frequent Acquirers for Only Private and Only Subsidiary Targets

	All	*All-Cash*	*Non-Cash*
Panel A: 1 Year			
Only Private	−0.54%	−0.80%	−0.08%
	235	73	162
Only Subsidiary	0.54%	0.52%	−0.28%
	63	40	23
Panel B: 2 Years			
Only Private	−0.54%	0.13%	−0.45%
	224	72	152
Only Subsidiary	0.17%	−0.06%	0.12%
	63	40	23
Panel C: 3 Years			
Only Private	−0.70%[b]	−0.03%	−0.71%[b]
	203	67	136
Only Subsidiary	−0.10%	0.02%	−0.56%
	62	39	23

Notes:
This table presents the Calendar Time Abnormal Returns (CTARs) to merger portfolios for bidders acquiring only private and only subsidiary targets. We estimate the calendar time abnormal returns as follows:

$$\text{CTAR}_{i,t} = R_{it} - E(R_{cpi,t})$$

where R_{it} is the monthly return for each security, and $E(R_{cpi,t})$ is the expected return on the event control portfolio assigned to each security. The expected return on the event portfolio is proxied by the 25 size and B/M reference portfolios. In each calendar month t, a portfolio is formed by including all stocks with an acquisition event during the past 12, 24, or 36 months. The portfolio is rebalanced every month by including new event firms executed a transaction in the previous month and dropping the ones whose latest acquisition event falls out of the one- to three-year holding period. In each calendar month t we calculate a mean return $(\overline{\text{CTAR}_t})$ across the firms: $\overline{\text{CTAR}_t} = \sum_{i=1}^{N_t} \frac{1}{N_t} \text{CTAR}_{i,t}\, j$ where N_t is the number of firms in the calendar month t. We then calculate a grand mean monthly abnormal return (MCTAR): $\text{MCTAR} = (1/T) \sum_{t=1}^{T} \overline{\text{CTAR}}_t$. Statistical significance is calculated by using the time-series standard deviation of the mean monthly abnormal returns. The results are further partitioned by the all-cash and non-cash (i.e., any other type of offer) methods of payment. The number of firms is reported below the mean CTARs.
[a] Denotes significance at the 1% level.
[b] Denotes significance at the 5% level.
[c] Denotes significance at the 10% level.

Table 10 reports the one- to three-year CTARs for only private and only subsidiary subgroups.[21] For only private, three-year monthly average abnormal returns are negative (−0.70%) and statistically significant at the 5% significance level. For only subsidiaries, the three-year monthly average abnormal returns are also negative but insignificant, however, the small number of only subsidiary firms does not allow drawing any fruitful conclusions. In a nutshell, the results in Table 10 indicate that even for the only private and only subsidiary sub-groups abnormal returns are negative. This evidence further confirms our findings reported in Table 9.

21 We do not examine 'only public' acquisitions in Table 10 as there is no valid number of observations (only 6) for the long-run analysis.

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(iii) Price Reversals

Finally, we examine whether our results are just a manifestation of long-term reversals as suggested by Jegadeesh and Titman (1993). In particular, our finding that acquirers buying private targets and/or subsidiaries earn positive abnormal returns in the short-run but lose in the long-run may be attributed to short-run persistence followed by long-term reversals. If firms involved in private or subsidiary acquisitions experience positive returns in the few months prior to the acquisition announcement, then the stock prices of these acquirers may be subject to a brief persistence followed by long-term reversals.

To investigate this, we firstly measure the pre-announcement performance of each bidder acquiring private targets and/or subsidiaries. Specifically, for each acquirer, we calculate its calendar time abnormal returns for the six months preceding the acquisition announcement.[22] Acquisitions of private and subsidiary firms are ranked according to their pre-event abnormal returns and placed into two groups (i.e., top and bottom groups). As a result, we sort our sample into four categories: (i) Privately-held acquisitions that experience the highest pre-event abnormal returns; (ii) Privately-held acquisitions that exhibit the lowest pre-event abnormal returns; (iii) Acquisitions of subsidiary targets that experience the highest pre-event abnormal returns, and (iv) Acquisitions of subsidiary targets that exhibit the lowest pre-event abnormal returns.

Results for this analysis are presented in Table 11. We observe that acquirers of private targets that gain high pre-event abnormal returns (4.21%) have experienced insignificant 3-year CTARs (–0.29%). Similar results are obtained for 1- and 2-year analysis respectively. Further, acquirers of private targets that experienced negative pre-event abnormal returns (−2.93%) also exhibit insignificantly negative returns in the long run (−0.18%). Moreover, bidders of subsidiary targets that earn negative pre-event returns (−2.70%) experience insignificant 3-year monthly average abnormal returns. Thus, the negative post-event average abnormal returns reported in Table 9 cannot simply be attributed to long-term reversals. Taken as a whole, our evidence suggests that the long-run results are not simply a manifestation of momentum.

In sum, our long-run evidence indicates that bidders experience significant negative abnormal returns regardless of the type of target acquired. This result is inconsistent with the short-run findings that report significant positive abnormal returns for private and subsidiary acquisitions and insignificant returns for public acquisitions. Therefore, our evidence shows that short-run gains for private and subsidiary targets do not sustain in the long-run.

5. CONCLUSION

We examine shareholders' wealth effects of UK frequent bidders acquiring public, private, and/or subsidiary targets with alternative methods of payment which involves a comprehensive sample of UK frequent bidders initiating 1,401 acquisitions between 1987–2004. We find that in the short-run acquirers gain significantly when buying private and subsidiary targets while breaking even when buying public targets. This result is to a great extent in line with Fuller et al. (2002). Further, our findings are robust when controlling for relative size, book-to-market ratio, target origin, and industry

22 Acquirers without market value or book-to-market data are excluded from the sample.

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Table 11

Mean Calendar Time Abnormal Returns (CTARs) of Frequent Acquirers Buying Private and Subsidiary Targets with the Best and Worst Pre-event Performance

	Private Targets		*Subsidiary Targets*	
	Top Group (50%) in Terms of Pre-event Returns	*Bottom Group (50%) in Terms of Pre-event Returns*	*Top Group (50%) in Terms of Pre-event Returns*	*Bottom Group (50%) in Terms of Pre-event Returns*
6-Month Pre-Event	4.31%[a]	−3.15%[a]	3.60%[a]	−2.88%[a]
	289	290	172	172
1-Year Post-Event	−0.06%	−0.12%	0.12%	0.19%
6-Month Pre-Event	4.28%[a]	−3.17%[a]	3.59%[a]	−2.94%[a]
	281	281	167	167
2-Year Post-Event	−0.05%	−0.30%	−0.02%	−0.58%[c]
6-Month Pre-Event	4.21%[a]	−2.93%[a]	3.45%[a]	−2.70%[a]
	263	264	163	163
3-Year Post-Event	−0.29%	−0.18%	−0.26%	0.01%

Notes:
This table presents the pre-announcement (6-month) as well as the post-event 1-, 2- and 3-year monthly average calendar time abnormal returns of four categories of acquirers. Firstly, acquirers are divided into two groups: acquirers of private and subsidiary targets, respectively. These two groups created are further subdivided into four categories: (i) Acquirers of private targets who had the highest six-month pre-announcement abnormal returns, (ii) Acquirers of private targets who had the lowest six-month pre-announcement abnormal returns, (iii) Acquirers of subsidiary targets who had the highest six-month pre-announcement abnormal returns, (iv) Acquirers of subsidiary targets who had the lowest six-month pre-announcement abnormal returns. We estimate calendar time abnormal returns as follows:

$$\mathrm{CTAR}_{i,t} = R_{it} - E(R_{cpi,t})$$

where R_{it} is the monthly return for each security, and $E(R_{cpi,t})$ is the expected return on the event control portfolio assigned to each security. The expected return on the event portfolio is proxied by the 25 size and B/M (corresponding reference) portfolios. In each calendar month t, a portfolio is formed by including all stocks with an acquisition event during the past 12, 24, or 36 months. The portfolio is rebalanced every month by including new event firms executed a transaction in the previous month and dropping the ones whose latest acquisition event falls out of the one- to three-year holding period. In each calendar month t we calculate a mean return $\overline{(\mathrm{CTAR}_t)}$ across the firms in the portfolio: $\overline{\mathrm{CTAR}_t} = \sum_{i=1}^{N_t} \frac{1}{N_t} \mathrm{CTAR}_{i,t}$ where N_t is the number of firms in the calendar month t. We then calculate a grand mean monthly abnormal return, the (MCTAR): $\mathrm{MCTAR} = (1/T) \sum_{t=1}^{T} \overline{\mathrm{CTAR}}_t$. Statistical significance is calculated by using the time-series standard deviation of the mean monthly abnormal returns. The number of firms is reported below the 6-month pre-event average CTARs.
[a] Denotes significance at the 1% level.
[b] Denotes significance at the 5% level.
[c] Denotes significance at the 10% level.

diversification effects. However, given that short-run results can be driven by market mispricing, it is not prudent to draw a conclusion based solely on the short-run study. We thus extend our study to the long-run and find that frequent acquirers suffer significant wealth losses irrespective of the type of target acquired. This finding is in sharp contrast with the short-run evidence that acquirers gain when buying private and

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subsidiary targets implying that the market may initially overreact to the acquisition announcement. It is therefore premature to accept Fuller et al.'s conclusion based solely on the short-run evidence. In this respect, given the inconsistency between the short- and long-run evidence, no firm conclusion can so far be drawn on whether acquiring private and/or subsidiary targets creates real economic gains or indeed the short-run gains are merely an illusion of market inefficiency.

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