The Long Run Performance of U.K. Acquirers: A Comprehensive Sample of Cross-Border, Domestic, Public and Private Targets

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ABSTRACT

We examine the post-acquisition stock returns of U.K. acquiring firms, using a sample of over 4,000 acquisitions of domestic public, domestic private, cross-border public, and cross-border private targets completed during 1984-1998. Acquisitions of public targets, whether domestic or cross-border, result in significantly negative abnormal returns. Acquisitions of private targets, whether domestic or cross-border, result in insignificant abnormal returns. There is weak evidence that cross-border acquisition returns are lower than domestic acquisition returns. In domestic public acquisitions, noncash financed deals significantly underperform whereas cash financed deals do not. In contrast, there is weak evidence that cross-border public acquisitions financed, there is no evidence of underperform. In private acquisitions which are noncash financed, there is no evidence of underperformance. The negative returns in public acquisitions are predominately caused by glamour acquirers, whilst glamour acquirers acquiring private targets do not underperform. Returns in cross-border acquisitions are significantly higher when both bidder and target operate in high-tech industries, and are negatively related to the cultural differences between the U.K. and the target's country.

Compared to earlier merger waves, the waves of the 1980s and 1990s were distinct in terms of the amount of cross-border acquisition activity. On a global scale, cross-border acquisitions world-wide during 1986-2000 accounted for 26 percent of the value of total acquisitions. The global value of cross-border acquisitions rose steadily from about 0.5 percent of world wide GDP in the mid-1980s to being over 2 percent in 2000. Clearly, cross-border acquisitions are more prevalent and bigger than ever before, and now account for over eighty percent of all foreign direct investment by industrialized countries (UNCTAD (2000)).

Within this global trend, U.K. acquiring companies have played an increasingly important role. As shown in Figure 1, both the number and value of cross border acquisitions by U.K. companies increased dramatically in the mid 1980s and 1990s, and were approximately equal to the number and value of domestic acquisitions over this period. The value of cross-border acquisitions carried out by U.K. companies accounts for an increasing proportion of all worldwide cross-border acquisitions. By 2000, the U.K. was the largest acquiring country worldwide, accounting for 31 percent of the total value of all cross-border acquisitions (UNCTAD (2000)).

An important aspect of the U.K. acquisition activity abroad is the acquisition of privately held companies. Over the period 1985-98, 94 percent of the number of cross-border acquisitions were for privately held targets. In terms of total expenditure, 58 percent of the value of cross-border acquisitions was for privately held targets, reflecting the smaller size of private acquisitions. For domestic acquisitions, 88 percent of their number and 25 percent of their value are accounted for by acquisitions of privately held targets.¹ Acquisitions of private targets therefore account for the vast majority of acquisitions made by U.K. companies in terms of number, and approximately half in terms of value.

Insert Figure 1 about here.

Despite the scale of acquisitions involving cross-border targets and targets which are not publicly quoted, nearly all acquisition studies are limited to acquisitions of domestic targets which are publicly quoted. These studies have typically found that acquiring shareholders earn neutral returns over the short run announcement period.² While these announcement period returns are important sources of information, the possibility exists that the market does not always accurately predict the future performance of acquisitions. Hence, an evaluation of the long run performance provides actual rather than expected outcomes. The long run post-acquisition studies have found mixed results with some finding negative returns, some studies finding zero returns.³ However, there are important theoretical reasons why acquisitions of private targets will differ from acquisitions of public targets. It is therefore important to examine the long run performance of these different types of acquisitions.

This paper examines the 3-year post-acquisition performance of a sample of over 4,000 acquisitions by U.K. public firms occurring during 1984-1998. The paper differs from previous long run merger studies in two important respects. Firstly, the study includes acquisitions of both domestic and cross-border targets, and acquisitions of both publicly quoted and privately held targets. No previous long-run event study has examined all of these four different types of acquisition. This comprehensive sample allows each acquisition type to be directly contrasted with one another, and permits us to reach conclusion on the long run wealth effects of all acquisitions made by public acquirers. Secondly, this study utilizes a long-run methodology robust to most recent criticisms of commonly used long run methods (Mitchell and Stafford (2000)), which although used in domestic acquisitions has not yet been employed in cross-border acquisitions. The calendar-time methodology (Jaffe (1974): Mandelker (1974)) we employ explicitly accounts for statistical problems arising from the lack of independence among observations, arising from overlapping returns and the non-random timing of acquisitions (Lyon, Barber and Tsai (1999)).

Our results show that over the announcement period of the acquisition, acquirers of domestic public targets and of cross-border public targets earn insignificantly positive abnormal returns. In

contrast, acquirers of domestic and cross-border private targets earn significantly positive returns of around 2 percent. Over the 36-months following acquisition, acquirers of both domestic and cross-border public targets earn large significantly negative abnormal returns. In contrast, acquirers of private targets in both cross-border and domestic acquisitions experience abnormal returns which are not significantly different from zero. Taken as a whole, neither the samples of all cross-border or all domestic acquisitions evidence significant underperformance. However, there is weak evidence that cross-border acquisitions result in lower returns than domestic acquisitions.

The underperformance in domestic public acquisitions is limited to acquisitions which are financed with noncash methods of payment. In contrast, there is weak evidence that cross-border acquisitions of public targets underperform if they are made with cash. In private acquisitions, noncash acquisitions do not result in significantly negative returns. The negative returns in public acquisitions are also strongly associated with glamour acquirers, whilst in contrast, glamour acquirers acquiring private targets do not underperform.

We find that the post-acquisition returns in cross-border acquisitions are significantly higher when both the acquirer and the target operate in high-tech industries, and are negatively related to the cultural differences between the U.K. and the target's country. We find no evidence that they are related to exchange rate movements, risk diversification, or country effects related to taxation, corporate governance standards, and accounting standards.

The paper is organized as follows: Section I discusses the determinants of post-acquisition returns in acquisitions of cross-border targets and privately held targets. Section II reviews the existing empirical evidence on long-run acquisition returns. Section III describes the data, sample characteristics, and methodology. Section IV presents the returns for the entire sample. Section V investigates the determinants of long run returns. Section VI concludes.

I. Hypotheses on Bidder Returns in Acquisitions of Cross-Border and Private Targets A. Hypotheses on Bidder Returns in Acauisitions of Cross-Border Targets

There are several explanations for why cross-border acquisitions occur which are separate from the motives for domestic acquisitions, and several reasons why the performance of cross-border acquisitions will differ from domestic acquisitions (Conn (2002)).

A.1. Imperfections and Costs in Product and Factor Markets

The Internalization theory posits that firms acquire abroad in order to exploit intangible firmspecific assets such as patents, production techniques, or technology know-how. The markets for these assets are characterised by various imperfections, which prevent the firm from exploiting its advantage abroad in any way other than by internalizing the markets for such assets. For Internalization to work, acquirers must acquire companies that can tap into their technological know-how, and have some common information-based assets. The implication is that value creation in cross-border acquisitions will be positively related to the technological know-how of both the acquirers and their targets (Morck and Yeung (2001)).

A.2. Biases in Government and Regulatory Policies

The tariff and trade policy of the target country can have substantial effects on incentives for cross-border acquisitions. During the 1990s, cross-border acquisitions have been spurred by diminishing barriers from host countries. Of the 1,035 regulatory changes occurring in over 100 countries during 1991-99, 974 facilitated FDI and hence cross-border acquisitions (UNCTAD (2000)).⁴ Facing prohibitive tariffs or the threat of import restrictions, a U.K. firm may purchase manufacturing capacity rather than be an exporter. Alternatively, Moeller and Schlingemann (2002) argue that acquisition performance may be lower in more restrictive institutional environments, because of greater asymmetric information.

Tax effects can be powerful motivations for cross-border acquisitions. One popular motivation is the arbitrage of different national tax systems through transfer pricing and borrowing in taxfavored environments, thereby receiving tax benefits over domestic firms. Alternatively, Scholes and Wolfson (1990) posit that tax law changes in the 1981 Economic Recovery Act put foreign buyers in the U.S. at a comparative disadvantage to domestic acquirers due to increased incentives for domestic mergers arising from more accelerated depreciation allowances and lower corporate tax rates. Similarly, the modifications of some of the tax related benefits in the 1986 Tax Reform Act is argued to have reduced the competitive disadvantage of foreign buyers in the U.S.

A.3. Imperfections and Asymmetries in Capital Markets

Acquirers may carry out cross-border acquisitions to replace the target's inefficient national corporate governance system with its own relatively efficient system. La Porta, Lopez-De-Silanes, Shleifer and Vishny (2000) argue that investor protection is highest in English common law countries, followed by the Scandinavian, Germanic and French civil law countries, and that efficient cross-border acquisitions will take place when an acquirer from a high investor protection country acquires a target from a low investor protection country.

Another motive for cross-border acquisitions is the international diversification of country risk, which may benefit the acquirer's shareholders if they are unable to invest as efficiently in a diversified portfolio of foreign shares. This may be the case if individual investors are hampered in foreign investments by relatively high information costs, limited expertise in understanding foreign accounting practices, or high transaction costs. The prediction here is that acquisitions will create relatively more value when the economies of the bidder and target countries are less correlated with one another.

Froot and Stein (1991) argue that imperfections and information asymmetries in currency markets may explain cross-border acquisitions. Because there are information asymmetries associated with the future returns to an acquisition, entrepreneurs are unable to acquire solely with external funds, and must partially finance the acquisition with their own net wealth. Since their net wealth relative to target country entrepreneurs varies with the exchange rate, Froot and

Stein (1991) argue that cross-border acquirers will have a comparative advantage over local bidders when their currency is strong.

A.4. Other Determinants of Returns in Cross-Border Acquisitions

There are other reasons why cross-border acquisitions may perform differently to domestic acquisitions. Firstly, the negative long run returns in domestic acquisitions of public targets are limited to offers made with securities only (Loughran and Vijh (1997)). The two alternative explanations are that acquirers either offer securities when they are overvalued (Myers and Majluf (1984)), or when they have a low valuation of the target (Fishman (1989)). However, since targets in cross-border acquisitions are often unwilling to accept foreign equity (Gaughan (2002)), acquirers may be forced to either forgo the acquisition or to use cash in cross-border acquisitions.

There are various reasons why it may be harder to realize the gains in cross-border acquisitions compared to domestic acquisitions. Differences in national culture may hinder the post-acquisition integration process. Evidence from the human resource, organizational behavior and strategic management disciplines as well as practitioner surveys suggest that national culture is an important determinant of success in cross-border acquisitions (Schoenberg (2000): UNCTAD (1999)). Additionally, information differences lead to cross-border acquisitions being more risky than domestic ones. One may therefore expect that the lower the accounting standards of the target's country, the less reliable the target's financial statements and the more difficult the process of target valuation.

B. Hypotheses on Bidder Returns in Acquisitions of Private Targets

The explanations why acquisitions of private targets will have a different effect on performance from acquisitions of public targets can be considered as either method of payment effects or private company discount effects.

B.1. Method of Payment Effects

Since private targets tend to have more concentrated ownership than public targets,⁵ the problem of overvalued bidders using securities may be mitigated in private acquisitions because

the bidding firm managers' can disclose private information to target shareholders. Further, target shareholders have an incentive to assess the acquirer's prospects carefully because they end up holding a substantial amount of the bidding firm's securities after the acquisition. Consequently, private target shareholders may add value by becoming effective monitors of subsequent management performance in the acquirer. Thus, as the size of the private target increases, so does the likelihood of improved monitoring when securities are used as the method of payment. These arguments may apply to domestic private targets only if the target shareholders in cross border private acquisitions is unwilling to accept foreign securities, and is either unwilling or unable to act as an effective monitor.

B.2. The Private Company Discount

There are various reasons why private firms may sell at a discount to public firms. Firstly, private firms may be harder to sell than publicly traded firms and this lack of liquidity makes them less valuable resulting in lower premiums being paid (Fuller, Netter and Stegemoller (2002)). Another fundamental difference is that private acquisitions involve much less publicity than public acquisitions. This may firstly decrease the likelihood of competing acquisitions. Secondly, it could decrease the likelihood of hubris-motivated takeovers, since acquirers in private acquisitions are better able to break off negotiations, if necessary, without incurring high prestige costs. In contrast, evidence of hubris may appear in public acquisitions because the acquirer may find it necessary to keep bidding in order to win the bidding against competitors, or simply to win over the recalcitrant target (Ang and Kohers (2000)).

Empirical evidence is inconclusive on whether private targets sell for a discount or not. Although Koeplin, Sarin and Shapiro (2000) find that private companies sell for a significant discount compared to public companies, Ang and Kohers (2001) find that private targets sell for a significantly higher premium than public targets.

II. Previous Research on Returns to Shareholders of Bidding Firms

A. Empirical Evidence on Bidder Returns: Acquisitions of Cross-Border Targets There is extensive empirical evidence on the short run announcement period returns to acquiring company shareholders in cross-border acquisitions of publicly quoted targets. Conn (2002) reports that of the 15 studies he reviews, the primary conclusion is the dominance of zero or negative cumulative abnormal returns (CARs) for acquiring firms (both U.S. and U.K.). These findings closely parallel those observed in domestic acquisitions of public targets for both the U.S. (Andrade, Mitchell and Stafford (2000)) and the U.K. (Cosh and Guest (2001)).

There is limited empirical evidence on long horizon share returns in cross-border acquisitions.^{6,7,8} Table I summarizes the results of the six long run studies to date for both U.S. and U.K. acquirers. The drawback with the earliest four studies (Conn and Connell (1990): Danbolt (1995): Aw and Chatterjee (2000): Eckbo and Thorburn (2000)) is their use of the market model methodology, the weaknesses of which are now well documented. Market models suffer from parameter instability (Coutts, Mills and Roberts (1997)), are inferior to multi index models (Fama and French (1992)), and are subject to statistical biases which have led to more reliable test statistics being employed than those employed in these studies (Lyon, Barber and Tsai (1999)). The most recent studies by Black, Carnes and Jandik (2001) and by Gregory and McCorriston (2001) do address some of these methodological concerns.

Insert Table I about here.

The four studies by Conn and Connell (1990), Danbolt (1995), Aw and Chatterjee (2000), and Black, Carnes and Jandik (2001), examine cross-border acquisitions of publicly quoted targets. Despite the variation in methodology and sample, all four studies report significantly negative post-acquisition returns. Aw and Chatterjee (2000) directly compare cross-border with domestic acquisitions, and find that in cross-border acquisitions returns are lower although not significantly so. The studies by Eckbo and Thorburn (2000) and by Gregory and McCorriston (2001) examine cross-border acquisitions of both publicly and privately held targets. In contrast to the other crossborder long run studies, neither study finds evidence of significantly negative long run returns. Neither study reports returns separately for public and private acquisitions.

The tentative overall conclusions one draws from these six studies is that cross-border acquisitions of all public and private targets do not result in significantly negative long run returns, whereas cross-border acquisitions of targets which are publicly quoted do result in significantly negative long run returns.

B. Empirical Evidence on Bidder Returns: Acquisitions of Private Targets

There is very little evidence on either the short or long-run returns to public acquirers that acquire privately held targets. Chang (1998) finds no significant announcement period returns for bidders that acquire private targets with cash, whilst bidders that use stock have a significantly positive return. In contrast, bidders that acquire public targets with stock have a significantly negative return. Hansen and Lott (1996) find that bidders experience a two percent higher return when purchasing a private firm compared to a public firm. Similarly, Fuller, Netter and Stegemoller (2002) find that bidder shareholders gain when buying a private firm or subsidiary but lose when purchasing a public firm. Therefore, the short run evidence suggests significantly higher returns for U.S. buyers in domestic purchases of privately held targets than in purchases of publicly held targets.

Only one study to date (Ang and Kohers (2001)) examines separately the effects of private acquisitions on the acquirers long run stock performance. Ang and Kohers (2001) use the Fama-French three-factor model and find no evidence of abnormal returns in the 3-year post acquisition period. The same result holds for subsamples of cash offer bids and stock offer bids.⁹

III. Data, Sample Statistics and Methodology

A. Data

We examine a sample of acquisitions of domestic public, domestic private, cross-border public, and cross-border private target companies by U.K. public companies, completed between January 1, 1984 and December 31, 1998. The sample acquisitions are drawn from the Thomson

Financial SDC Mergers Database and the magazine Acquisitions Monthly. Acquisitions are defined as occurring when the bidder owns less than 50 percent of the target's voting shares before the takeover, and increases its ownership to at least 50 percent as a result of the takeover. We exclude acquisitions if the U.K. bidder is not a publicly traded firm with its share price data held on the Datastream Database. Many acquisitions involve relatively small targets that may not be expected to have a material effect on the acquirer. We therefore adopt a materiality constraint that limits our sample to acquisitions in which the target's acquisition value is at least 5 percent of the acquiring firm's market value in the acquisition month. We exclude acquisitions for which the acquisitions of cross-border public targets, 1,009 acquisitions of cross-border private targets, 576 acquisitions of domestic public targets, and 2,628 acquisitions of domestic private targets. *B. Sample Statistics*

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Table II highlights salient features of the samples according to whether the target is a domestic or cross-border company, and a public or private company. Firstly, consistent with the aggregate figures above, private targets are more numerous than public targets but also much smaller in both absolute and relative values compared to bidders. Secondly, two thirds of the sample acquirers engaged in multiple acquisitions during the sample period 1984-1998, with an average number of 4 acquisitions. Multiple acquisitions raise the problem of dependent observations due to overlapping observations, and we return to this issue below. Third, cash is the primary medium of payment in cross-border acquisitions and in private acquisitions. The most prevalent use of stock is found in domestic acquisitions of public targets. Fourth, the proportion of hostile acquisitions is about 10 percent for cross-border acquisitions of public targets and 13 percent for domestic deals with public firms. Thus, friendly acquisitions dominate our samples. Fifth, acquisitions between firms in related industries (defined as the same 2-digit SIC code) occur in 45 percent of the cross-border sample and 39 percent of the domestic sample, although the proportions are significantly higher in acquisitions of private targets compared to public targets.

Sixth, acquisitions involving high-tech firms as either the target or bidder are significantly more common in cross-border acquisitions.¹⁰ This is consistent with the Internalization theory for cross-border acquisitions and is consistent with Harris and Ravenscraft (1991). Finally, the major targets of cross-border acquisitions are in North America (52 percent) and Europe (40 percent). Thus, U.K. acquirers have a clear preference for targets in industrialized countries and English speaking countries.

Insert Table II about here.

C. Methodology

C.1. Matching Control Firms

The selection of a proper benchmark is always problematic when examining long run returns. Lyon, Barber, and Tsai (1999) show that differences in the properties of sample and population distributions can create biases and ambiguities in test statistics. Table II shows that acquirers tend to be distributed in the larger size and lower book-to-market ratio quintiles. Our counterfactual approach therefore measures acquirer performance relative to non-acquiring control firms matched on size and book-to-market ratio. The control firms are selected by first dividing all U.K. stocks listed on Datastream into ten equal sized portfolios based on their market values at the beginning of each calendar year. Those control firms that carried out a sample acquisition within the preceding or subsequent 5 years are then excluded from the matching universe. Each sample firm is then matched with the non-merging firm from its size portfolio that has the closest bookto-market ratio at the beginning of the calendar year. This procedure is repeated for each posttakeover calendar year using a fresh grouping by size decile for the year in question.¹¹ The control firm approach avoids the skewness and rebalancing biases inherent in a reference portfolio. The skewness bias arises if the distribution of long run abnormal stock returns is positively skewed.¹² The rebalancing bias arises because the compound returns of a reference portfolio, such as an equally weighted market index, are typically calculated assuming periodic rebalancing.13

C.2. Buy-and-Hold Returns

We adopt two approaches to measure long run abnormal stock-price performance. First, we follow the approach of Barber and Lyon (1997) and estimate buy-and-hold abnormal returns (BHARs), beginning the month following completion through the end of the 36 month period following the completion month, or until the sample firm is delisted. As pointed out by Fama (1998) and Mitchell and Stafford (2000), estimating statistical significance with this methodology is problematic because standard t-statistics do not adequately account for potential cross-sectional dependence in returns. In particular, standard errors will be biased downwards and t-statistics will be biased upwards. This is a real problem for our sample because only a small number (502) of our sample acquisitions are carried out by single acquirers, and the remaining 3842 sample acquisitions are accounted for by 974 acquirers, an average of 4 per acquirer. The time between acquisitions for multiple acquirers is on average 14 months meaning that many acquisitions will overlap with another acquisition by the same acquirer. To address this problem, we firstly calculate t-statistics which are adjusted for cross-sectional dependence using an identical method to Mitchell and Stafford (2000).¹⁴ The advantage of this method is that it allows us to attach statistical significance to buy-and-hold returns, which are an accurate representation of investor experience.

C.3. Calendar Time Returns

The disadvantage with the *t*-statistics described above is that the standard errors are still likely to be understated, because the average correlations are increasing in the holding period and therefore the correlation of 3-year BHARs will be higher than the annual correlations calculated here (Mitchell and Stafford (2000)). Consequently Fama (1998) and Lyon, Barber and Tsai (1999) recommend using the Jaffe (1974) - Mandelker (1974) calendar time portfolio technique to overcome cross sectional dependence. We also use this method, which as shown by Lyon, Barber and Tsai (1999) is not biased in the presence of overlapping returns. In each calendar month we form a portfolio of event firms, and take the average cross-sectional abnormal return for that

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month. The average abnormal return for the entire sample is the time series average (CTAR) and the *t*-test is calculated using the standard deviation of the time series.

IV. The Stock Returns for our Sample

A. Announcement Returns

Table III reports the buy-and-hold abnormal return over the announcement period of the acquisition, from the beginning of the announcement month to the end of the completion month. Firstly, acquisitions of domestic public targets result in insignificantly positive returns of 0.51 percent, whilst acquisitions of cross-border public targets result in significantly positive returns of 2.23 percent. Acquisitions of private targets result in significantly positive returns of 1.65 percent in cross-border acquisitions and 1.92 percent in domestic acquisitions. For all public acquisitions, returns are an insignificant 0.83 percent, compared to a significantly positive 1.84 percent in all private acquisitions. The returns to all domestic and all cross-border acquisitions are very similar, being a significantly positive 1.66 and 1.72 percent respectively.

The insignificant returns to acquirers in domestic acquisitions of public targets are consistent with previous studies (Andrade, Mitchell and Stafford (2000)). The large positive returns in crossborder public acquisitions are higher than in previous studies (Conn (2002)). However, the finding of significantly positive gains in private acquisitions is consistent with previous evidence (Fuller, Netter and Stegemoller (2002): Hansen and Lott (1996)).

Insert Table III about here.

B. Post-Acquisition Stock Returns

B.1. Buy-and-Hold Returns

Panel A of Table IV reports the buy-and-hold abnormal returns for the 36 months following the completion of the acquisition. We observe a clear difference in returns between public acquisitions and private acquisitions, in both the cross-border and domestic samples. Domestic acquisitions of public targets result in significantly negative returns of -19.78 percent. Cross-border acquisitions of public targets result in returns of -32.33 percent. The return for acquisitions

of all publicly quoted targets is a significantly negative -22.11 percent. In contrast, there is no evidence of significantly negative returns in acquisitions of private targets. Domestic acquisitions of private targets result in insignificant negative returns of -4.78 percent, whilst cross-border acquisitions of private targets result in insignificant negative returns of -10.91 percent. The return for all cross-border and domestic acquisitions of private targets is an insignificant -6.48 percent. For all cross-border acquisitions the return is -13.37 percent, which is significant at the 10 percent level. For all domestic acquisitions the return is an insignificantly negative -7.47 percent, and for all acquisitions it is an insignificantly negative -9.02 percent.

Insert Table IV about here.

For our event time returns, we have used BHARs as recommended by Lyon, Barber and Tsai (1999). However, Fama (1998), who favors cumulative abnormal returns (CARs), notes that BHARs grow with the return horizon even if there is no abnormal return after the first period. We therefore recalculated the tests in Panel A of Table IV, using CARs instead of BHARs but found no significant differences between the two techniques.¹⁵

B.2. Calendar Time Returns

Panel B of Table IV reports the monthly calendar time abnormal returns (CTARs) for the 36 months following the completion of the acquisition. Domestic acquisitions of public targets result in significantly negative returns of -0.40 percent, indicating that these acquirers exhibit average abnormal returns of -0.40 percent per month over the 36-month period following the acquisition. Cross-border acquisitions of public targets result in significantly negative returns of -0.71 percent. The return for acquisitions of all publicly quoted targets is a significantly negative -0.42 percent. This translates to a three year return of approximately -14.06 percent ((1-0.0042)³⁶-1), which is somewhat lower than the BHAR of -22.11 percent reported in Panel A.

Cross-border acquisitions of private targets result in insignificant negative returns of -0.19 percent, whilst domestic acquisitions of private targets result in insignificant negative returns of -0.08 percent. The return for all acquisitions of private targets is -0.14 percent. This translates to a

three-year return of approximately -4.92 percent, which is close to the negative BHAR of -6.48 percent reported in Panel A. For all cross-border acquisitions, the return is an insignificantly negative -0.27 percent. For the domestic acquisitions, the return is an insignificantly negative - 0.19 percent. The CTAR results are therefore quite similar to the BHARs, both in terms of magnitude and statistical significance.

Loughran and Ritter (2000) suggest that CTARs lack power because they weight each month equally regardless of the number of observations in that month, and are therefore inferior to BHARs. To check the robustness of our results, we recalculated the CTARs by weighting each calendar month by the number of observations in that month, but found no significant differences between the two techniques.^{16,17}

We have identified several patterns in the long run returns which are robust to using either buy-and-hold or calendar time returns, and are consistent with the empirical long run studies reviewed in Section II. Firstly, acquisitions of domestic public and cross-border public companies both exhibit significantly negative returns. Secondly, acquisitions of domestic private companies and cross-border private companies, both exhibit insignificant returns. Thirdly, acquisitions of all domestic companies, which include both public and private targets, exhibit insignificant returns. Fourthly, returns in cross-border acquisitions are slightly lower than in domestic acquisitions. For the sample of all cross-border acquisitions, weak evidence of negative returns is shown using the buy-and-hold *t*-statistic but not the calendar time *t*-statistic. We consider the latter to be the more reliable methodology because of the difficulty in estimating the true correlation of 3-year BHARs, and hence the true standard errors. Consequently, in Section V below, which investigates the determinants of long run returns, we report results based on calendar time abnormal returns.¹⁸

V. Cross-Sectional Patterns of Long Run Returns

In this section, we examine the determinants of long run returns. In Section A, we employ univariate analysis using calendar time abnormal returns, and in Section B we employ regression analysis using the Fama-Macbeth time-series of cross-section methodology.

A. Univariate Analysis

A.1. Long-Run Returns by Method of Payment and Relative Size

Table V reports the CTARs to acquirers classified by type of target, method of payment and relative size. Acquisitions are categorized according to whether the acquisition is made with a 100 per cent all cash offer, or any other type of other, which we define as noncash. The latter includes stock offers, stock and cash offers, and other offers. According to the theory that private acquisitions perform well because target shareholders become effective monitors in the acquirer, returns in noncash acquisitions should be increasing in the relative size of the target (Fuller, Netter and Stegemoller (2002)). We define relative size as either low or high, depending on whether it is lower or higher than the entire sample's relative size midpoint of 13.77 percent.

Panel A reports the returns for domestic acquisitions. In acquisitions of public targets financed by cash, returns are an insignificant 0.06 percent. In contrast, if such acquisitions are financed by noncash, returns are a significantly negative -0.47 percent. Returns are significantly negative (-1.01 percent) for the low relative size acquisitions, but insignificantly negative (-0.31 percent) for the high relative size acquisitions. In acquisitions of private targets, returns are small and insignificant regardless of whether the payment is cash (-0.14 percent) or noncash (-0.07 percent). There is little support for the theory that the returns in private acquisitions financed by noncash increase significantly as the relative size increases. For the low relative size sample, the return is an insignificantly negative -0.15 percent compared to an insignificant 0.12 percent for the high relative size sample.

Panel B reports returns for cross-border acquisitions. Table II showed that 80 percent of crossborder acquisitions of public targets are cash financed. These acquisitions result in negative returns of -0.59 percent, significant at the 10 percent level. The very small sample of 26 noncash public acquisitions exhibit large negative although insignificant returns of -0.51 percent. For both cash and noncash acquisitions of public targets, returns decrease significantly as the relative size increases. In acquisitions of private targets, returns are insignificantly negative for both cash (- 0.19 percent) and noncash (-0.32 percent) financed acquisitions. There is little difference in returns between the low and high relative size acquisitions which are noncash financed.^{19,20}

Insert Table V about here.

Our results strongly suggest that acquisitions of domestic public targets financed by noncash means result in significantly negative long run returns, whereas those financed by cash do not, consistent with previous studies (Loughran and Vijh (1997)). In contrast, in cross-border acquisitions of public targets, we find weak evidence of negative returns in cash financed deals. In line with this finding, Black, Carnes and Jandik (2001), report that cross-border public acquisitions underperform, regardless of whether cash or stock is used. Since shareholders of foreign companies may be reluctant to receive securities as the method of payment, one possibility is that overvalued acquirers or acquirers with a low value of the target are forced to offer cash instead of securities. In contrast to public acquisitions, we find no evidence that acquisitions of private targets which are financed by noncash offers experience negative returns. We find little evidence to suggest that improved monitoring can explain the difference between public and private acquisitions financed by noncash. We suggest instead that the problem of overvaluation may be mitigated in private acquisitions because the bidder can disclose private information to target shareholders, or because target shareholders have a greater incentive to assess the acquirer's prospects carefully.

A.2. Long-Run Returns by the Acquirers Value and Glamour Status

Rau and Vermaelen (1998) show that long run underperformance in acquisitions of public targets is predominantly caused by "glamour" acquirers with low book-to-market ratios, and that positive long run returns are associated with "value" acquirers with high book-to-market ratios. Table VI reports the calendar time returns by target type and the acquirer's book-to-market quintile at the beginning of the year of acquisition. Acquirers are classified as value if their book-to-market ratio quintile is quintile 5 (highest), neutral if quintiles 2-4, and glamour if quintile 1 (lowest).

Panel A of Table VI reports returns for domestic acquisitions. In acquisitions of public targets, glamour acquirers earn significantly negative returns of -0.84 percent. These returns are much lower than the insignificant negative returns of -0.31 percent experienced by neutral acquirers of public targets, and somewhat lower than the insignificantly negative returns of -0.60 percent experienced by value acquirers of public targets. The returns by value, neutral and glamour in acquisitions of private targets are very different. Glamour acquirers of private targets earn insignificantly positive returns of 0.14 percent. Neutral acquirers earn returns that are not significantly different from zero. However, value acquirers earn significantly negative returns of -0.74 percent.

Panel B of Table VI reports the returns in cross-border acquisitions. In acquisitions of crossborder public targets, glamour acquirers earn significantly negative returns of -1.48 percent. In contrast, the returns in acquisitions of cross-border public targets by value and neutral acquirers are insignificantly positive, being 0.62 percent and 0.15 percent respectively. In cross-border acquisitions of private targets, returns for glamour acquirers are an insignificantly positive 0.29 percent. Neutral acquirers earn insignificant returns of -0.04 percent. Value acquirers earn significantly negative returns of -1.31 percent.

Insert Table VI about here.

We therefore find that glamour acquirers experience negative returns in public acquisitions, whereas value acquirers experience negative returns in private acquisitions. The former finding is consistent with that of Rau and Vermaelen (1998), whose explanation is that glamour acquirers suffer from hubris and consequently overpay for their targets.²¹ Furthermore, Ang and Kohers (2001) argue that hubris is much more likely to surface in public acquisitions compared to private acquisitions because of the much higher level of publicity involved. Our evidence is consistent with this point of view. An alternative explanation, however, is that glamour acquirers are more able to carry out acquisitions which benefit management at the expense of shareholders, since the board of directors and large shareholders are more likely to give management the benefit of the

doubt and approve its acquisition plans. As a result, they can pursue acquisitions for managerial benefits such as income, status, and power (Marris (1964)), and such benefits are almost certainly greater when acquiring a public target compared to a private target.

A.3. Long-Run Returns by the High-Tech Status of the Acquirer and Target

To test the Internalization theory of cross-border acquisitions, we relate long run returns in cross-border acquisitions to the technological know-how of both the acquirer and target industries. We categorize industries as high-tech using the classification of Butchart (1987) described above, and compare returns for acquisitions in which bidder and target industries are both high-tech, with acquisitions in which bidder and target industries are not both high-tech. For comparison purposes, we also examine domestic acquisitions. Table VII reports calendar time returns by target type and the high-tech status of the acquisition.

Panel A of Table VII reports returns for domestic acquisitions. In domestic public acquisitions involving two high-tech firms, returns are a significantly negative -1.45 percent. When both firms are not high-tech, returns are an insignificantly negative -0.31 percent. In domestic private acquisitions, returns are an insignificant -0.21 percent in high-tech acquisitions, and an insignificant 0.01 percent in non-high-tech acquisitions. The return in all domestic acquisitions when both firms are high-tech is an insignificant -0.43 percent, compared to an insignificant -0.15 percent when both firms are not high-tech. Overall therefore, we find little difference between high-tech and non-high-tech acquisitions when the target is domestic.

Panel B of Table VII reports returns for cross-border acquisitions. In cross-border public acquisitions, returns are negative and of a similar magnitude in both high-tech and non-high-tech acquisitions. However, in cross-border private acquisitions, high-tech acquisitions result in significantly positive returns of 0.82 percent, whilst non-high-tech acquisitions result in significantly negative returns of -0.44 percent. In all cross-border acquisitions involving high-tech firms, returns are a positive 0.64 percent, significant at the 10 percent level. In contrast, all cross-

border acquisitions which do not involve both high-tech firms, result in significantly negative returns of -0.52 percent.

Insert Table VII about here.

We check whether returns are higher in cross-border acquisitions if either (rather than both) the acquirer or the target are high-tech companies. The results (not tabulated) show no evidence of this. Acquisitions by high-tech acquirers of non-high-tech targets result in returns of -0.68 percent, significant at the 10 percent level. Acquisitions by non-high-tech acquirers of high-tech targets earn insignificantly negative returns of -0.41 percent. All cross-border acquisitions by high-tech acquirers result in insignificant returns of 0.10 percent compared to a significantly negative -0.45 percent for non-high-tech acquirers.

The cross-border high-tech acquisitions involve a higher percentage of related acquisitions (58 percent) than the cross-border non-high-tech acquisitions (41 percent). However, this difference is not driving our results. The results (not tabulated) show that cross-border non-high-tech related acquisitions and cross-border non-high-tech non-related acquisitions earn significantly negative returns of -0.49 percent.

A competing hypotheses to Internalization for our findings is that cross-border acquirers are spreading the fixed costs of R&D over national markets and yielding important cost advantages, especially in countries with markets of limited size. This motive is more likely to involve mergers of similar size firms, whereas Internalization is more likely to involve larger companies taking over smaller companies (UNCTAD (2000)). To distinguish between these hypotheses, we examine the returns to cross-border high-tech acquisitions according to whether the relative size is lower than or greater than the median of 13.77 percent. For those with lower relative size, returns are a significantly positive 0.75 percent, whilst for higher relative size, returns are an insignificant 0.06 percent. These results appear to support the Internalization explanation rather than the economies of scale hypotheses.²²

Our long run results are consistent with the short run results of Morck and Yeung (1992) who find that acquirer returns over the announcement period are positively correlated with firm level R&D expenditure. Our results are also consistent with the findings of Morck and Yeung (1991), and Morck and Yeung (2001) who show that firm level R&D is positively related to the value of multinational companies, but not domestic companies.

A.4. Target Country Effects in Cross-Border Acquisitions

In this section we analyze calendar time returns in cross-border acquisitions by target country and by target country groupings based on trade differences, legal differences, cultural differences, and accounting differences. The results are reported in Table VIII, for both public and private acquisitions, although the sample sizes for the former are often very small.

Panel A of Table VIII reports returns by target country, for all countries in which there were at least 25 sample acquisitions. There is a large variance across countries. Acquisitions of U.S. private targets result in insignificant negative returns of -0.03 percent, somewhat higher than the insignificant negative returns of -0.39 percent for all other countries. However, the negative returns to public acquisitions in the U.S. of -0.83 percent, significant at the 10 percent level, are lower than the insignificantly negative returns of -0.36 percent to public acquisitions for all other countries. Acquisitions in Australia, Germany and Sweden result in large positive although insignificant returns greater than 0.40 percent. Acquisitions in Belgium, Canada, and the Netherlands earn large negative returns, which are lower than -0.90 percent, and significant in the case of Belgium and the Netherlands, at least at the 10 percent level of significance.

Insert Table VIII about here.

Panel B of Table VIII reports returns by target country groupings. Acquisitions in Europe, North and Central America, Australia and Oceania, exhibit insignificant returns of -0.04 percent, -0.11 percent and 0.24 percent respectively. Only 30 acquisitions take place across the continents of Africa, Asia, Eastern Asia, South America and the former USSR, the return for which is an insignificantly negative -0.80 percent. To measure the impact of trade policy, government intervention and capital restrictions on returns we employ the Economic Freedom of the World index developed by Gwartney, Lawson and Block (1996). We take the average country index scores over the years 1985, 1990, and 1995. The scale for our sample ranges from 3.2 (least free) for Brazil to 9.4 (most free) for Hong Kong, with a median of 7.6. We classify any country with a score of 7.6 or less as having low economic freedom, and any country with a score of more than 7.6 as having high economic freedom. The returns to acquisitions in low economic freedom countries are an insignificant -0.06 percent, and an insignificant -0.27 percent for high economic freedom countries. These results suggest that economic freedom does not have a significant effect on long run returns.

To examine the impact of the target country's corporate governance system, we report returns according to whether the target country's system is the English common law system, the Scandinavian civil law system, the Germanic civil law system or the French civil law system (La Porta, Lopez-De-Silanes, Shleifer and Vishny (2000)). Acquisitions of targets from countries with the English, Scandinavian, Germanic, and French legal systems earn returns of -0.07 percent (*t*-statistic -0.34), 0.64 percent (*t*-statistic 1.03), 0.35 percent (*t*-statistic 0.90) and -0.71 percent (*t*-statistic -2.36) respectively. These results are not consistent with the arguments of La Porta, Lopez-de-Silanes, Shleifer and Vishny (2000), since the lowest investor protection system results in the lowest, not highest, returns, and there is no linear relation between returns and quality of investor protection.

To measure the impact of the national cultural difference between the U.K. and the target's country, we employ a composite index based on Hofstede's (1991) numerical classifications of four national cultural dimensions.²³ For each acquisition, we take the difference between the target country and the U.K. in each of the four cultural dimensions. Our composite index is the summation of these four differences,²⁴ which ranges from a low of 22 for the U.S. to a high of 194 for Portugal, with a median of 94. We classify any country with a score of 94 or less as having low cultural differences, and any country with a score of more than 94 as having high

cultural differences. Acquisitions in countries with low cultural differences result in insignificant negative returns of -0.19 percent, whilst acquisitions with high cultural differences result in significantly negative returns of -0.75 percent. These results suggest that returns are negatively correlated to cultural differences, and are consistent with practitioner surveys, which report that up to 90 percent of unsuccessful cross-border acquisitions experience major, unforeseen, difficulties due to cultural differences (Schoenberg (2000): UNCTAD (1999)). It is also consistent with Datta and Puia (1995), who find that announcement period returns to U.S. acquirers are negatively related to national cultural differences between the U.S. and the target's country.

To examine the impact of the target country's accounting standards on long run returns, we employ the categorization of Bavishi (1993). The scale of this index for the countries in our sample ranges from a low of 36 for Portugal to a high of 83 for Sweden, with a median of 69. We classify any country with a score of 69 or less as having low accounting standards, and any country with a score of more than 69 as having high accounting standards. For acquisitions in low accounting standard countries, the returns are an insignificantly negative -0.46 percent, whilst for acquisitions in high accounting standard countries, the returns are somewhat lower, being an insignificantly negative -0.18 percent. These results do not provide strong support for the argument that lower accounting standards result in lower long run returns.

A.5. Other Determinants of Returns in Cross-Border Acquisitions

To test whether the 1986 U.S. tax changes had a positive impact on acquirer long run returns, we examined calendar time returns to acquisitions of U.S. companies both before and after the change. The results, not tabulated, show that for U.S. acquisitions completed during 1984-86, the returns are an insignificantly negative -0.31 percent, whilst for U.S. acquisitions completed during 1987-1998, returns are an insignificantly negative -0.12 percent. These results provide little support for the argument that increased tax incentives are linked to long run returns.

To test the risk diversification motive, we examined whether long run returns were negatively related to a diversification variable, defined as the five-year pre-acquisition correlation coefficient between the U.K. equity market index and the target country's equity market index. We classified any country with a coefficient lower (higher) than the median correlation as having low (high) correlation. The returns, not tabulated, for acquisitions in low correlation countries were an insignificant -0.28 percent, compared to an insignificant -0.18 percent in high correlation countries. These results provide no evidence that the correlation in bidder and target markets have a impact on long run returns.

To test whether the strength of sterling relative to the target country currency (at the time of the acquisition) has a positive effect on long run returns, we subtract the average exchange rate (units of target country currency per pound sterling) for the 1984-98 sample period from the exchange rate for the completion month, and divide this difference by the average exchange rate. As a result, positive (negative) values indicate that sterling is strong (weak) relative to the target currency. The results, not tabulated, show that for acquisitions in which this variable is positive, returns are an insignificantly negative -0.23 percent, and for acquisitions in which this variable is negative, returns are an insignificantly negative -0.19 percent. These results provide no support for the argument that the strength of sterling at acquisition has an impact on long run returns. *B. Reeression Analysis*

In this section we examine the determinants of long run bidder returns using multiple regression analysis. We use a time series of monthly cross-sections methodology which controls for the problem of cross-sectional dependence (Andrade, Mitchell and Stafford (2001)). Specifically, we run a cross-sectional regression for each calendar month of the sample period, where the dependent variable is the monthly abnormal return. Coefficient values are estimated using the average values of the monthly coefficients, and statistical significance is calculated using their standard deviation.²⁵ In Table IX, we present the results of regressions for the samples

of domestic public, domestic private, cross-border public, cross-border private, all domestic, all cross-border, all public, all private and all acquisitions.

Our explanatory variables include the variables that the univariate tests above indicated to be of some importance and other control variables, and are as follows: a dummy variable equal to one if the target is private, zero if public; a dummy variable equal to one if the acquisition is cross-border, zero if domestic; a dummy variable equal to one if the acquirer is value, zero if not; a dummy variable equal to one if the acquirer is one if the acquirer is cross-border, zero if domestic; a dummy variable equal to one if the acquirer is value, zero if not; a dummy variable equal to one if the acquirer is glamour, zero if not; a dummy variable equal to one if the payment method is noncash, zero if cash; a dummy variable equal to one if bidder and target are both high-tech, zero if not; an interaction variable between noncash offers and relative size, equal to relative size if the payment method is noncash, zero if cash; a culture variable equal to the sum of the cultural differences between the U.K. and the target country, as described above; a dummy variable equal to one if the acquisition is hostile, zero if friendly; a dummy variable equal to one if the target is a subsidiary of another company, zero if not; and acquirer size.²⁶

Insert Table IX about here.

For the domestic public sample reported in column (1), the coefficient on the noncash variable is significantly negative and the coefficient on the glamour variable is negative, significant at the 10 percent level. The coefficient on the hostile dummy variable is significantly positive whilst the coefficient on the subsidiary variable is positive and significant at the 10 percent level. For the domestic private sample reported in column (2), the coefficient for the value variable is significantly negative at the 10 percent level, whilst the glamour variable is significantly positive.

For the cross-border public sample reported in column (3), the relative size noncash coefficient is significantly negative, the coefficient on the glamour variable is significantly negative, and the culture variable is negative and significant at the 10 percent level. For the cross-border private sample reported in column (4), the coefficient for value acquirers is significantly

negative, the high-tech variable has a significantly positive coefficient, and the culture variable is significantly negative.²⁷

Columns (5) and (6) report results for all domestic and all cross-border acquisitions respectively. The results are driven by the private acquisitions within each sample and the coefficients are similar, in magnitude and significance, to those in columns (2) and (4). The additional variable in both models is the private dummy variable, which is significantly positive in both cases. Columns (7) and (8) report results for all public and all private acquisitions respectively. These samples are dominated by domestic acquisitions, and the coefficients are very similar to those in columns (1) and (2) respectively. The additional variable in both models is the cross-border dummy variable, which is insignificantly negative in both cases. Column (9) reports results for the entire sample of 4344 acquisitions. The coefficient for value is significantly negative, and the coefficient for private acquisitions is significantly positive. The coefficient for cross-border acquisitions is negative and significant at the 10 percent level.

The multivariate results are similar to the univariate results and the conclusions drawn are as follows. The significant difference between private and public acquisitions is robust after controlling for other explanatory variables. Glamour acquirers underperform in public acquisitions but not private acquisitions where in contrast, value acquirers underperform. Returns in domestic acquisitions of public targets are significantly lower when noncash is used rather than cash. There is no evidence of this in either cross-border acquisitions of public targets or acquisitions of private targets. We find no evidence that relative size has a positive impact in noncash private acquisitions, and therefore no support for the more effective monitor theory.²⁸ In all cross-border acquisitions have a significantly positive effect. There is weak evidence that cross-border acquisitions experience lower returns than domestic acquisitions, consistent with the evidence of Denis, Denis and Yost (2002) who show that multinational firms operate at a value discount compared to domestic firms.

Of the control variables, we find that in domestic acquisitions, hostile acquisitions perform better than friendly acquisitions. This is consistent with previous U.K. evidence, and the argument that hostile acquisitions are carried out for disciplinary motives (Cosh and Guest (2001)). Although the number of cross-border hostile deals is very small, there is no evidence of superior long run returns.²⁹ We tentatively suggest that retention of target management is especially important in cross-border acquisitions, due to their local knowledge of the different cultural, legal and regulatory environment. The results also show that acquisitions of domestic public subsidiaries result in higher returns than acquisitions of domestic public non-subsidiaries.³⁰ Although the result is weak and does not hold in cross-border public acquisitions, it provides some support for the theory that more concentrated ownership in the target results in higher acquirer returns because of factors such as the reduction of asymmetric information in security financed acquisitions.

VI. Conclusions

This study examines the long run returns of U.K. public acquirers for a comprehensive sample of acquisitions involving cross-border public, cross-border private, domestic public, and domestic private targets. Previous long run studies have focused on acquisitions of domestic publicly quoted targets, yet acquisitions of cross-border and private targets account for over 60 percent of the value of acquisitions by public acquirers over our sample period.

We find that over the announcement period of the acquisition, acquisitions of domestic public targets result in insignificant abnormal returns whilst in contrast, acquisitions of private targets result in significantly positive returns. Over the long run post-acquisition period, acquirers of public targets underperform, whereas acquirers of private targets do not. We find weak evidence of lower returns in cross-border acquisitions than domestic acquisitions.

The underperformance in domestic public acquisitions is limited to acquisitions when noncash is the method of payment. In cross-border acquisitions of public targets, there is weak evidence that cash, which is used in the vast majority of cases, is also associated with underperformance. If foreign shareholders are reluctant to accept the securities of foreign bidders, then overvalued acquirers or acquirers with a low target value who would tend to use shares in a domestic setting are forced to use cash when acquiring overseas. There is no evidence of underperformance in acquisitions of private targets which are financed by noncash means. Our evidence is consistent with the theory that acquirers offer securities to acquire public targets when the acquirer is overvalued, but in acquisitions of private targets this problem is mitigated, because acquirers can disclose private information to the more concentrated target shareholders.

The poor performance of public acquisitions is limited to those made by glamour acquirers, whilst in contrast, glamour acquirers in private acquisitions do not underperform. The lack of publicity surrounding private acquisitions may decrease the likelihood of hubris-motivated takeovers, since acquirers are better able to break off negotiations when it becomes strategic to do so. An alternative explanation is that glamour acquirers carry out managerial acquisitions, and that public rather than private targets are chosen for this type of acquisition.

A much higher proportion of cross-border acquisitions involve high-tech companies as both bidder and target. There is weak evidence that such acquisitions result in positive long run returns, and strong evidence that returns are much higher than when both firms do not operate in high-tech industries. In this latter case long run returns are significantly negative. Our conclusion is that technological know-how is necessary to justify direct foreign investment through acquisition. We find no evidence that long run returns are related to risk diversification, exchange rate factors, freedom of trade, corporate governance systems, or accounting standards. We find that long run returns are significantly negatively correlated with the differences in culture between the U.K. and the target country. Our results apparently suggest that, in cross-border acquisitions, the market does not react efficiently to the news conveyed by the high-tech nature of the acquisition, or by the national cultural differences between the bidder and target countries.

Finally, our conclusion on the average share price performance of our publicly quoted acquirers is that they gain at announcement and do not lose significantly in the long run. This conclusion runs contrary to the negative conclusion of most previous long run merger studies, which however, only sample acquisitions by these firms of publicly quoted targets. Although long run underperformance and apparent stock market mispricing are associated with acquisitions of public targets, such acquisitions account for less than half of the total number and value of all acquisitions by public acquirers. The results presented here suggest that we should be very cautious of drawing any conclusions on the general impact of acquisition from samples of acquisitions which exclude private targets, since a serious sample selection bias may exist.

Panel A: Number of Domestic and Cross-Border Acquisitions



Panel B: Value of Domestic and Cross-Border Acquisitions



Figure 1. The Number and Value of Domestic and Cross-Border Acquisitions by U.K. Acquirers, 1969-2001. Panel A reports the total number of acquisitions made by U.K. acquiring companies (public and private) of domestic targets and cross-border targets (public and private). Panel B reports the total value of acquisitions made by U.K. acquiring companies (public and private) of domestic targets and cross-border targets (public and private). The values used are expressed in 2000 sterling values (billions), deflated using the FT All Share index, and then converted into U.S. dollars using an exchange rate of \$1.5 = £1. The data source is the U.K. Office for National Statistics.

	Summary of	the Long Run Ev	ent Studies	of Acquisiti	ons of Cro	ss-Borde	or Targets and Private Ta	argets	
This table reports the resul	lts of previous long run ϵ	event studies that have	examined acqui	sitions of cross-	border target	s, and acqui	sitions of private targets.		
Study	Domestic or Cross-	Public or Private	Bidder	Target	Period	Sample	Methodology	Share Returns	Length of Event
	Border		Country	Country		Size		(%)	Penod (Months)
Conn & Connell	Cross-border	Public	U.S.	U.K.	1971-80	35	Market model CARs	-11.5 ^b	12
(1990)									
	Cross-border	Public	U.K.	U.S.	1971-80	38	Market model CARs	-22.6 ^b	12
Danbolt	Cross-border	Public	Non U.K.	U.K.	16-9861	50	Market model CARs	-9.79 ª	5
(1995)									
Aw & Chatterjee	Cross-border	Public	U.K.	Non U.K.	1991-96	41	Market model CARs	-24.4 ª	24
(2000)									
Eckbo & Thorburn	Cross-border	Public and private	U.S.	Canada	1964-83	394	Market model CARs	-3.7	12
(2000)									
Black, Cannes, & Jandik	Cross-border	Public	U.S.	Non-U.S.	1985-95	361	Size/ book-to-market / prior	-22.2 ^a	60
(2001)							return portfolio BHARs		
Gregory & McCorriston	Cross-border	Public and private	U.K.	Non U.K.	1985-94	333	Size / book-to-market	-9.3	60
(2001)							portfolio BHARs		
Ang & Kohers	Domestic	Private	U.S.	U.S.	1984-96	7,070	Fama-French three-factor	0.8	36
(2001)							model monthly intercept		
a, b, c Significantly, different	from zero at the 1–5 and	d 1.0% lavale reenactive	out a fue	tailad taet					

Table II

Sample Statistics

This table reports summary statistics for a sample of domestic and cross-border acquisitions made by U.K. public firms between January 1984 and December 1998, where the acquirer was included on the Datastream Database, and where size and book-to-market ratios were available for the end of the last calendary year prior to the year of announcement. Includes only transactions where acquisition value was at least 5% of acquirer market value at announcement. Book-to-market ratio and size quintiles are calculated by ranking all Datastream firms by book-to-market ratio (or size) at the beginning of each year and taking five groups of equal size in terms of number. Acquirers in quintile 1 have the lowest book-to-market ratio is zize). Transaction values in foreign currencies were converted to sterling using the exchange rate at the end of the announcement month. The values used are expressed in 2000 sterling values (millions), deflated using the FT All Share index, and then converted into U.S. dollars using an exchange rate of \$1.5 = £1. There are 89 sample acquisitions for which the method of payment is unknown. High-tech companies are those, whose primary SIC code is defined as high-tech by Butchart (1987). Butchart (1987) defines U.K. industries as high-tech if the R&D expenditure to industry output is substantially above average. If this ratio is above - but not substantially above - average, a second measure is employed based on the proportion of scientists, professional engineers and technicians in the labor force. Related acquisitions are defined as those in which the acquirer and target share the same primary 2-digit SIC code. Subsidiary targets are defined as those in which the acquirer and target share the same primary 2-digit SIC code.

	Domestic Public	Domestic Private	Cross-Border Public	Cross-Border Private
Number of acquisitions	576	2,628	131	1,009
Number of acquirers	403	1,146	109	539
Average number of acquisitions by each acquirer	4	4	4	4
Mean book-to-market ratio quintile of acquirer	2.0	1.8	2.2	2.2
Mean size quintile of acquirer	3.6	2.6	4.5	3.6
Mean size of acquirer (US\$ m)	1,796	440	4,901	1,709
Mean transaction value (US\$ m)	639	84	1,569	288
Mean relative size (transaction value to acquirer)	0.55	0.31	0.37	0.23
Time period				
1984-89	311	841	67	343
1990-98	265	1,787	64	666
Method of payment				
All cash	75	1,400	105	706
All stock	152	268	11	49
Stock and cash	287	710	6	148
Other	62	194	9	73
High-tech bidders	121	499	35	303
High-tech targets	130	480	47	342
Both high-tech	48	260	25	208
Hostile acquisitions	75	0	13	0
Related acquisitions	127	1,130	46	464
Subsidiary targets	138	841	10	394
Continent of target for cross-border acquisitions				
Australia & Oceania a			11	40
Africa ^b			1	4
Asia ^c			2	3
Eastern Asia d			1	15
Europe ^e			24	434
Former USSR ^f			0	1
North & Central America 8			92	501
South America h			0	3

^a Australia (9, 35), New Zealand (2, 5). ^b South Africa (1, 4). ^cIndia (2, 0), Pakistan (0, 1), Sri Lanka (0, 2). ^d Burma (0, 1), China (0, 2), Hong Kong (0, 7), Japan (1, 0), Malaysia (0, 3), Singapore (0, 2). ^eAustria (0, 2), Belgium (1, 24), Czech Republic (0, 1), Denmark (0, 16), Eire (1, 12), Finland (1, 3), France (6, 113), Germany (3, 77), Greece (0, 1), Hungary (0, 1), Iceland (0, 1), Italy (0, 23), Luxembourg (0, 4), Netherlands (4, 77), Norway (2, 7), Portugal (0, 3), Spain (1, 27), Sweden (4, 24), Switzerland (1, 13). ^g Bermuda (0, 3), Canada (6, 36), Cayman Islands (0, 1), Mexico (0, 4), Panama (0, 1), United States (86, 464). ^b Brazil (0, 1), Chile (0, 1), Venezuela (0, 1).

Table I

Table III

Announcement Period Abnormal Returns

This table reports mean buy-and-hold abnormal share returns (BHAR) for the acquirer for the announcement period, computed with respect to control firms matched on size and book-to-market ratio.

	Statistic	Public	Private	All
Domestic	Mean BHAR	0.51	1.92 ^a	1.66 ^a
	t-statistic	0.58	4.90	4.65
	No of acquisitions	576	2,628	3,204
Cross-border	Mean BHAR	2.23	1.65 ^a	1.72 ª
	t-statistic	1.04	2.81	2.96
	No of acquisitions	131	1,009	1,140
All	Mean BHAR	0.83	1.84 ^a	1.68 ^a
	t-statistic	1.01	5.65	5.51
	No of acquisitions	707	3,637	4,344

^{a, b, c} Significantly different from zero at the 1, 5 and 10% levels respectively, using a two tailed test

Table IV

Post-Acquisition Abnormal Share Returns Using Buy-and-Hold Returns and Calendar Time Returns

Panel A reports mean buy-and-hold abnormal returns (BHAR) for acquirers over the 36 months following the end of the announcement period, computed with respect to control firms matched on size and book-to-market ratio. The *t*-statistics are adjusted for cross-sectional dependence in an identical way to Mitchell and Stafford (2000). Panel B reports mean calendar time abnormal share returns (CTAR) calculated using the acquirer's 36 month post-acquisition abnormal returns, with reference to control firms matched on size and book-to-market ratio. Calendar months with less than 5 observations have been excluded from the analysis.

	Statistic	Public	Private	All
	Panel A:	Buy-and-Hold Returns		
Domestic	Mean BHAR	-19.78 ^a	-4.78	-7.47
	t-statistic	-2.73	-0.75	-1.22
	No of acquisitions	576	2,628	3,204
Cross-border	Mean BHAR	-32.33 ^b	-10.91	-13.37 °
	t-statistic	-2.51	-1.42	-1.80
	No of acquisitions	131	1,009	1,140
All	Mean BHAR	-22.11 ª	-6.48	-9.02
	t-statistic	-3.14	-1.03	-1.47
	No of acquisitions	707	3,637	4,344
	Panel B:	Calendar Time Returns	5	
Domestic	Mean CTAR	-0.40 ^b	-0.08	-0.19
	t-statistic	-1.97	-0.55	-1.38
	No of monthly observations	200	210	210
	No of acquisitions	576	2,628	3,204
Cross-border	Mean CTAR	-0.71 ^b	-0.19	-0.27
	t-statistic	-2.17	-1.20	-1.63
	No of monthly observations	185	202	202
	No of acquisitions	131	1,009	1,140
All	Mean CTAR	-0.42 ^b	-0.14	-0.21
	t-statistic	-2.10	-1.06	-1.58
	No of monthly observations	202	210	210
	No of acquisitions	707	3,637	4,344

^{a, b, c} Significantly different from zero at the 1, 5 and 10% levels respectively, using a two tailed test

Table V

Calendar Time Returns by Method of Payment and the Relative Size of Target

This table reports mean calendar time abnormal share returns (CTAR) calculated using the acquirer's 36 month post-acquisition abnormal returns, with respect to control firms matched on size and book-to-market ratio. Acquisitions are classified according to the payment method used, categorized as an all cash offer, or any other type of offer. The payment method is unknown for 89 acquisitions. Acquisitions are also classified according to the relative size of the transaction value to the acquirer's market value at the announcement date. To group sample acquisitions by relative size, we rank them by relative size and take the lowest and highest 50 percent by relative size, giving a midpoint relative size of 13.77 percent. Calendar months with less than 5 observations have been excluded from the analysis, except for cross-border public noneash acquisitions, for which all available months were included.

		Pu	blic	Pri	vate	А	.11
Relative Size	Statistic	All Cash	Noncash	All Cash	Noncash	All Cash	Noncash
			Panel A: Do	mestic			
All	Mean CTAR	0.06	-0.47 ^b	-0.14	-0.07	-0.13	-0.22
	t-statistic	0.19	-1.97	-0.77	-0.35	-0.80	-1.26
	No of months	177	199	194	209	200	209
	No of acquisitions	75	501	1,400	1,172	1,475	1,673
5% - 13.77%	Mean CTAR	0.39	-1.01 ^b	-0.24	-0.15	-0.18	-0.36
	t-statistic	0.50	-2.40	-1.33	-0.57	-0.94	-1.62
	No of months	79	183	187	198	189	200
	No of acquisitions	28	109	793	536	821	645
>13.77%	Mean CTAR	0.06	-0.31	-0.15	0.12	-0.14	-0.19
	t-statistic	0.12	-1.24	-0.7	0.54	-0.73	-0.96
	No of months	134	199	194	207	200	209
	No of acquisitions	47	392	607	636	654	1,028
			Panel B: Cross	-Border			
All	Mean CTAR	-0.59 °	-0.51	-0.19	-0.32	-0.31	-0.21
	t-statistic	-1.65	-0.92	-0.79	-1.20	-1.29	-0.80
	No of months	181	180	201	188	203	190
	No of acquisitions	105	26	706	270	811	296
5% - 13.77%	Mean CTAR	-0.45	0.55	-0.15	-0.33	-0.31	-0.47
	t-statistic	-1.05	0.43	-0.50	-0.95	-1.29	-1.38
	No of months	146	173	198	176	203	179
	No of acquisitions	50	9	451	142	501	151
>13.77%	Mean CTAR	-1.16 ^b	-0.89	-0.17	-0.25	-0.41 °	-0.31
	t-statistic	-2.04	-1.56	-0.71	-0.66	-1.83	-0.91
	No of months	202	180	199	176	200	177
	No of acquisitions	55	17	255	128	310	145
			Panel C:	All			
All	Mean CTAR	-0.28	-0.40 °	-0.23	-0.08	-0.25	-0.19
	t-statistic	-1.03	-1.73	-1.45	-0.43	-1.61	-1.18
	No of months	193	201	202	209	203	209
	No of acquisitions	180	427	2,106	1,442	2,286	1,969
5% - 13.77%	Mean CTAR	-0.07	-0.83 ^b	-0.25	-0.17	-0.21	-0.31
	t-statistic	-0.18	-2.14	-1.29	-0.68	-1.11	-1.45
	No of months	174	185	198	199	200	201
	No of acquisitions	78	118	1,244	678	1,322	796
>13.77%	Mean CTAR	-0.49	-0.31	-0.21	0.08	-0.30 °	-0.14
	t-statistic	-1.44	-1.29	-1.21	0.38	-1.83	-0.81
	No of months	186	201	201	208	203	209
	No of acquisitions	102	409	862	764	964	1,173

^{a, b, c} Significantly different from zero at the 1, 5 and 10% levels respectively, using a two tailed test

Table VI

Calendar Time Returns by the Value, Neutral and Glamour Status of the Acquirer

This table reports mean calendar time abnormal share returns (CTAR) calculated using the acquirer's 36 month post-acquisition abnormal returns, with respect to control firms matched on size and book-to-market ratio. Acquirers are categorised as value, neutral or glamour depending on their book-to-market quintile at the beginning of the year of acquisition. Book-to-market ratio quintiles are calculated by ranking all Datastream firms by book-to-market ratios at the beginning of each year and taking five groups equal sized in terms of number. Acquirers in quintile 1 (lowest book-to-market ratio) are defined as glamour, acquirers in quintiles 2-4 are defined as neutral, and acquirers in quintile 5 are defined as value. Calendar months with less than 5 observations have been excluded from the analysis.

Value, Neutral or	Statistic	Public	Private	All
Glamour Status				
	Panel A: 1	Domestic		
Value	Mean CTAR	-0.60	-0.74 ^b	-0.71 ^b
	t-statistic	-1.15	-2.13	-2.43
	No of monthly observations	162	183	188
	No of acquisitions	87	433	520
Neutral	Mean CTAR	-0.31	-0.07	-0.21
	t-statistic	-1.46	-0.44	-1.43
	No of monthly observations	200	203	203
	No of acquisitions	359	1,651	2,010
Glamour	Mean CTAR	-0.84 ^b	0.14	-0.04
	t-statistic	-2.00	0.41	-0.17
	No of monthly observations	191	195	200
	No of acquisitions	130	544	674
	Panel B: Cr	oss-Border		
Value	Mean CTAR	0.62	-1.31 ^b	-1.27 b
	t-statistic	0.40	-2.21	-2.13
	No of monthly observations	58	182	182
	No of acquisitions	19	120	139
Neutral	Mean CTAR	0.15	-0.04	-0.03
	t-statistic	0.39	-0.18	-0.13
	No of monthly observations	177	200	201
	No of acquisitions	75	615	690
Glamour	Mean CTAR	-1.48 ^b	0.29	-0.14
	t-statistic	-2.20	1.07	-0.44
	No of monthly observations	122	195	195
	No of acquisitions	47	274	321
	Panel	B: All		
Value	Mean CTAR	-0.50	-0.85 ^a	-0.94 ^a
	t-statistic	-0.98	-2.76	-3.31
	No of monthly observations	173	189	199
	No of acquisitions	106	553	659
Neutral	Mean CTAR	-0.24	-0.12	-0.16
	t-statistic	-1.19	-0.85	-1.18
	No of monthly observations	202	204	204
	No of acquisitions	434	2,266	2,700
Glamour	Mean CTAR	-0.91 ^b	0.12	-0.16
	t-statistic	-2.54	0.39	-0.60
	No of monthly observations	195	203	203
	No of acquisitions	167	818	985

^{a, b, c} Significantly different from zero at the 1, 5 and 10% levels respectively, using a two tailed test

Table VII

Calendar Time Returns by the High-Tech Status of the Acquirer and Target

This table reports mean calendar time abnormal share returns (CTAR) calculated using the acquirer's 36 month post-acquisition abnormal returns, with respect to control firms matched on size and book-to-market ratio. Acquisitions are classified according to whether the acquirer's and target firm's primary industries are both defined as high-tech, according to Butchart (1987). Butchart (1987) defines U.K. industries as high-tech if the R&D expenditure to industry output is substantially above average. If this ratio is according to more average, a second measure is employed based on the proportion of scientists, professional engineers and technicians in the labor force. Calendar months with less than 5 observations have been excluded from the analysis.

High-Tech Status	Statistic	Public	Private	All
	Pa	nel A: Domestic		
High-tech	Mean CTAR	-1.45 ^b	-0.21	-0.43
	t-statistic	-2.02	-0.60	-1.42
	No of monthly observations	115	197	197
	No of acquisitions	48	260	308
Non-high-tech	Mean CTAR	-0.31	0.01	-0.15
	t-statistic	-1.54	0.08	-1.04
	No of monthly observations	200	211	211
	No of acquisitions	528	2,368	2,896
	Pane	l B: Cross-Border		
High-tech	Mean CTAR	-0.59	0.82 ^b	0.64 °
	t-statistic	-0.80	2.18	1.76
	No of monthly observations	96	181	181
	No of acquisitions	25	208	233
Non-high-tech	Mean CTAR	-0.61 °	-0.44 ^b	-0.52 ª
	t-statistic	-1.77	-2.07	-2.60
	No of monthly observations	184	201	202
	No of acquisitions	106	801	907
		Panel C: All		
High-tech	Mean CTAR	-1.10 ª	0.09	-0.11
	t-statistic	-2.68	0.28	-0.40
	No of monthly observations	173	201	201
	No of acquisitions	73	468	541
Non-high-tech	Mean CTAR	-0.39 °	-0.16	-0.23
	t-statistic	-1.90	-1.08	-1.62
	No of monthly observations	202	211	211
	No of acquisitions	634	3,169	3,803

^{a, b, c} Significantly different from zero at the 1, 5 and 10% levels respectively, using a two tailed test

Table VIII

Calendar Time Returns by Target Country Characteristics in Cross-Border Acquisitions

This table reports mean calendar time abnormal share returns (CTAR) calculated using the acquirer's 36 month post-acquisition abnormal returns, with respect to control firms matched on size and book-to-marker ratio. *Planel A* reports returns for other target countries (approximate) action that the returns include A right countries of the set and set countries (TAR) exploring activation abnormal returns, with respect to control firms matched on size and book-to-marker ratio. *Planel A* returns for the set arget countries (approximate) action and any comparise. "Other control ratio, Asia, South America, and the former USRs, Economic freadom is measured using the method of Gvartney. Lawson and Block (1996). The scale of this index a mages from 32 (least free) for Brazil 10 9 4 months freedom. The legal system of the larget country with a score of for or less a sharing high economic freedom. The legal system of the larget country is categorised according to Lapora. Lopez-deSlates, Shelfer and Vishny (2000). The scale of Kink in the scale of 50 40 etcs stab with agree to a score of more than 7 9 or less a sharing (plate) country with a score of for the relativation and any country with a score of for the relativation and the scale of the relativation and there exists a score of 50 etc. The relativation and there are and any country with a score of for the relativation and there exists and any country with a score of for the relativation and there exists and there exists and any country with a score of for the relativation and there exists and there exists and the relativation and there exists and the r

	No. of	Acquisitions		44	25	42	119	80	81	28	28	590	550
	No. of	Months		147	71	139	160	159	162	119	86	204	201
IIV	t-statistic			0.88	-1.74	-1.09	-0.54	1.01	-2.01	-0.18	1.38	-1.37	-0.16
	Mean	CTAR		0.50	-1.50 °	-1.60	-0.21	0.45	-0.90 ^b	-0.13	0.82	-0.37	-0.04
	No. of	Acquisitions		35	24	36	113	77	77	27	24	545	464
ite	No. of	Months	ountry	181	172	188	188	182	192	194	166	204	204
Prive	<i>t</i> -statistic		rns by Target C	0.15	-0.36	-1.08	-0.12	1.16	-2.16	-0.41	0.24	-1.40	-0.10
	Mean	CTAR	Panel A: Retu	0.11	-0.27	-1.32	-0.06	0.64	-1.16 ^b	-0.32	0.29	-0.39	-0.03
	No. of	Acquisitions		6	1	9	9	ŝ	4	1	4	45	86
ic	No. of	Months		143	36	66	138	77	51	36	94	175	202
Publ	<i>t</i> -statistic			-0.92	-1.17	1.00	-0.24	-0.91	2.56 ^b	1.86 °	-1.09	-0.68	-1.79
	Mean	CTAR		-0.83	-1.79	2.48	-0.20	-2.63	3.10	3.90	-1.18	-0.36	-0.83 °
	Target	Country		Australia	Belgium	Canada	France	Germany	Netherlands	Spain	Sweden	All non-U.S.	U.S.

Table VIII -Continued

				Public			P	rivate				AII	
Target Country		Mean	<i>t</i> -statistic	No. of	No. of	Mean	<i>t</i> -statistic	No. of	No. of	Mean	<i>t</i> -statistic	No. of	No. of
Groupings		CTAR		Months	Acquisitions	CTAR		Months	Acquisitions	CTAR		Months	Acquisitions
				Panel B: R	etums by Target	Country 6	Groupings						
Continent	Australia & Oceania	-0.61	-0.70	143	11	-0.12	-0.17	181	40	0.24	0.45	152	51
	Europe	-0.61	-0.90	160	24	-0.17	-0.62	204	434	-0.04	-0.15	192	458
	North & Central America	-0.54	-1.24	203	92	-0.17	-0.56	204	506	-0.11	-0.51	201	593
	Other continents	-1.54	-0.87	88	4	-0.47	-0.54	180	26	-0.80	-1.04	102	30
Economic freedom	Low	-0.55	-0.76	153	18	0.38	0.85	195	236	-0.06	-0.20	175	255
	High	-0.43	-1.07	203	113	-0.29	-1.09	204	744	-0.27	-1.15	203	857
Legal system	English common law	-0.56	-1.33	203	107	-0.14	-0.45	204	573	-0.07	-0.34	201	680
	Scandinavian civil law	-1.57	-1.44	105	7	0.53	0.68	191	50	0.64	1.03	133	57
	German civil law	-0.91	-0.44	113	5	0.39	0.81	204	92	0.35	06.0	169	76
	French civil law	0.31	0.40	153	12	-0.55	-1.54	195	280	-0.71 ^b	-2.36	182	292
Cultural differences	Low	-0.48	-1.26	203	118	-0.21	-0.79	204	789	-0.19	-0.87	203	207
	High	-0.59	-0.70	153	П	-0.69	° 10.1-	175	190	-0.75 ^b	-2.15	171	201
Accounting standards	Low	-0.91	-0.99	142	11	-0.31	-0.77	195	258	-0.46	-1.50	180	269
	High	-0.51	-1.49	203	118	-0.22	-0.71	204	715	-0.18	-0.80	203	833

 $^{\rm a.h.c.}$ Significantly different from zero at the 1, 5 and 10% levels respectively, using a two tailed test

Table IX

Fama-Macbeth Regressions of Post-Acquisition Performance

ny variable equ sample size dic of the which the small :. Cross-l (3) for y for model (except f private comp the analysis, (from excluded are is a dummy variable equiding less than 50 observiting (Hofstede, Portugal. four c if all o dev lo als one ned by a the acqu sum of ges fror if the t

	0	-	5		:	3)	(4)	_	3		9)	~	D	_	8	~	6)	_
	Dom	estic	Dom	estic	Cross-	border	Cross-b	order	Dom	estic	Cross-I	order	Pub	lic	Priv	ate	Ν	_
	Puł	blic	Priv	/ate	Puł	olic	Priva	ate										
Variables	Coeff.	I-stat.	Coeff.	t-stat.	Coeff.	I-stat.	Coeff.	t-stat.	Coeff.	t-stat.	Coeff.	<i>I</i> -stat.	Coeff.	I-stat.	Coeff.	t-stat.	Coeff.	t-stat.
Intercept	0.11	0.27	-0.29	-1.35	1.74	1.44	0.63 ^b	2.18	-0.32	-1.16	0.15	0.42	0.07	0.21	-0.10	-0.52	-0.41 °	-1.71
Noncash	-0.89 ^b	-2.00	-0.17	-0.68	0.85	0.61	-0.24	-0.64	-0.27	-1.23	-0.12	-0.32	-0.75 ^b	-2.03	-0.20	-0.88	-0.23	-1.26
Relative size * noncash	0.74	1.28	0.19	0.34	-5.55 ^b	-2.27	-0.21	-0.16	0.14	0.38	-0.14	-0.11	0.70	1.30	0.32	0.54	0.50	1.32
Value	-0.30	-0.61	-0.58 °	-1.68	-1.18	-0.69	4 66:0-	-2.11	-0.52 °	-1.78	-1.14 ^b	-2.34	-0.30	-0.62	-0.78 ^b	-2.52	-0.80 ª	-2.85
Glamour	-0.70 °	-1.86	0.69 ^b	2.35	-2.76 ª	-2.70	-0.29	-0.97	0.38	1.57	-0.58 °	-1.89	-0.89 ª	-2.78	0.35	1.61	0.00	0.01
High-tech	-0.57	-1.11	-0.05	-0.16	0.33	0.37	0.73 ^b	2.46	-0.28	-0.93	0.54^{b}	1.98	-0.46	-1.25	0.35	1.41	0.15	0.65
Subsidiary	0.75 °	1.78	-0.01	-0.05	-1.49	-0.99	-0.21	-0.88	0.25 °	1.65	-0.33	-1.43	0.12	0.26	-0.03	-0.22	0.13	1.03
Related	0.07	0.22	0.13	0.80	-0.03	-0.03	0.14	0.54	0.03	0.18	0.20	0.78	0.05	0.19	0.12	0.87	0.08	0.59
Acquirer size	0.00	-0.86	0.00	-0.65	0.00	0.57	00.00	0.63	0.00	0.09	0.00	0.58	0.00	-0.34	0.00	-0.06	0.00	-0.05
Hostile	0.95 ^b	2.18			-0.42	-0.28							1.06 ^a	2.75				
Culture					-0.16 °	-1.66	-0.01 ^a	-2.94			-0.01 ^a	-2.96						
Private									0.41 ^b	1.98	0.68 ^b	2.11					0.54 ª	2.70
Cross-border													-0.19	-0.55	-0.14	-0.89	-0.28 °	-1.80
Number of months	174		184		122		174		194		176		180		161		197	
A verage adjusted R ²	1.20 %		1.02 %		3.41 %		2.39%		0.89 %		2.27 %		0.89 %		0.89 %		0.74 %	
a, b, c Significantly different f	rom zero a	t the 1, 5	and 10% l _k	evels resp	ectively, 1	using a tw	o tailed tes	st.										

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ENDNOTES

¹ Based on figures from Acquisitions Monthly, representing all acquisitions made by all U.K. companies (public and private), in which the transaction value is disclosed. This source reports that the vast majority in terms of both number (85 percent) and value (87 percent) of domestic and cross-border acquisitions by U.K. companies are carried out by publicly held companies. ² See Andrade Mitchell and Stafford (2000).

³ These studies are reviewed in Agrawal and Jaffe (2001), and Andrade, Mitchell and Stafford (2000).

⁴ Examples include removal of compulsory host country requirements such as mandatory ownership by host country investors, restrictions on majority foreign ownership, and authorization requirements.

⁵ For example, Poulsen and Stegemoller (2002) find that the average director holdings for private firms acquired by a public company are over 58 percent.

⁶ In terms of profitability effects, Eckbo and Thorburn (2000) find a significantly negative impact of cross-border acquisitions on earnings, but not domestic acquisitions. Similarly, Moeller and Schlingemann (2000) find a significantly lower change in operating performance for cross-border acquisitions compared to domestic acquisitions.

⁷ There is a large literature examining the impact of multinationality on firm value, the results for which are mixed. For example, Denis, Denis and Yost (2002) find a negative impact, whilst Bodnar, Tang and Weintrop (1997) find a positive impact.

⁸ A recent practitioner survey found that shareholder value decreased in 53 percent of 700 crossborder acquisitions completed during 1996-98 (Kelly, Cook and Spitzer (1999)).

⁹ In terms of operating performance, Moeller and Schlingemann (2000) find a positive but insignificant effect of private acquisitions compared to public acquisitions.

¹⁰ Butchart (1987) defines U.K. industries as high-tech if the R&D expenditure to industry output is substantially above average. If this ratio is above - but not substantially above - average, a

second measure is employed based on the proportion of scientists, professional engineers and technicians in the labor force. The following U.K. SIC two digit industries are subsequently classified as high-tech: Chemicals (SIC 24), Plastics (SIC 25), Machinery & equipment (SIC 29), Office machines & computers (SIC 30), Electrical equipment (SIC 31), Electronics (SIC 32), Medical Instruments & control equipment (SIC 33), Telecommunications & post (SIC 64) Software (SIC 72), and R & D (SIC 73).

¹¹ If a control firm dies within the year, we replace the returns from the month of exit with the returns of the next nearest firm in terms of book-to-market ratio within the particular size decile at the beginning of the year in which the exit took place. If this control firm dies then we use the next closest firm, and so on.

¹² Examination of the distribution of abnormal returns revealed no evidence of skewness (skewness statistic -0.47), and therefore no need for skewness adjusted *t*-tests.

¹³ However, our approach is susceptible to the new listing bias which arises because some of our control firms may have began trading subsequent to the announcement month. Generally, the new listing bias creates a positive bias in test statistics, because newly listed firms tend to underperform.

¹⁴ The *t*-statistics are adjusted using the following approximation for the standard deviation:

 $\sigma_{\text{BHAR}} \left(independence \right) / \sigma_{\text{BHAR}} \left(dependence \right) \approx 1 / \sqrt{1 + (N-1)\rho_{ij}}$ (1)

where σ_{BHAR} = standard deviation of individual BHARs, N = number of sample events and $\rho_{i,j}$ = average correlation of individual BHARs. To estimate $\rho_{i,j}$, we firstly calculate average pairwise correlations of annual BHARs for all acquirers that complete acquisitions in the same month, and thus have 36 months of calendar time overlap. The grand average of these average pairwise correlations is 0.008. We then assume that the average correlation for overlapping observations is linear in the number of months of calendar time overlap, ranging from zero for non-overlapping

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observations to the estimated average correlation of $0.008\ {\rm for}\ acquirers$ with complete overlap.

This gives a $\rho_{i,j}$ of 0.002.

¹⁵ The results are available from the authors on request.

¹⁶ The results are available from the authors on request.

¹⁷ Our results are unchanged when we use only one acquisition per firm per calendar month in each category of acquisition.

¹⁸ We carried out the analysis in Section V using buy-and-hold returns instead of calendar time returns. This made no difference to our results or our conclusions.

¹⁹ Since larger monitors are more likely to be created when stock (rather than all noncash offers) is used, we examined the impact of relative size on stock acquisitions only. Our results were unchanged by this alternative classification.

²⁰ Since acquisitions of private targets involve relatively smaller targets, we examined the impact of relative size on returns in acquisitions of private targets. We found no difference between the low and high relative size subsamples.

²¹ We test whether the glamour effect is driven by the method of payment, but find no evidence of this. For domestic public glamour noncash acquisitions, the return is -0.78 percent whilst for domestic public glamour cash acquisitions, the return is -1.31 percent. For cross-border public glamour non-cash acquisitions, the return is 0.20 percent whilst for cross-border public glamour cash acquisitions, the return is -2.97 percent.

²² This may explain why cross-border high-tech acquisitions involving public acquisitions do not significantly outperform cross-border non-high-tech public acquisitions. The relative size of public acquisitions is much larger than private acquisitions, suggesting that economies of scale rather than Internalization may be the most important motive.

²³ The four dimensions are power distance, uncertainty avoidance, individuality, and femininity. Power distance refers to the distribution of power within the organizational system. Uncertainty avoidance relates to a country's level of intolerance for uncertainty. Individualism measures the perception of an individual's relationship with the rest of collectivity. Femininity refers to the primary goals and objectives that societies have for their progress.

²⁴ Hofstede's classification has been widely used in the management literature, and has been found to influence many aspects of a firm's organization, systems, and financial performance (Schoenberg (2000)).

²⁵ We also estimated the same regression models using the standard cross-section methodology with the 36-month BHAR as the dependent variable. The results were very similar and our conclusions unchanged by this alternative method.

²⁶ Previous studies have shown that returns in domestic acquisitions are positively associated with each of these characteristics. For related acquisitions see Megginson, Morgan and Nail (2000), hostile acquisitions (Cosh and Guest (2001)), acquirer size (Mitchell and Stafford (2000)), and subsidiary targets (Fuller, Netter and Stegemoller (2002)).

²⁷ For the cross-border regressions, we also included dummy variables for the target country's legal system, and continuous variables for the bidder and target country stock market correlation coefficient, exchange rate strength, economic freedom index, and the accounting standards index as specified above. The coefficients for these variables were insignificant, consistent with the univariate analysis, and were consequently excluded from the regression.

²⁸ We also carried out the regressions including relative size on its own, instead of the interactive relative size variable. Our results were unchanged by this alternative specification.

²⁹ The calendar time returns in domestic hostile acquisitions are an insignificantly positive 0.30 percent, compared to a significantly negative -0.54 percent in domestic friendly acquisitions. The

returns in cross-border hostile acquisitions are an insignificant negative -1.03 percent, compared to a significantly negative -0.70 percent in cross-border friendly acquisitions.

³⁰ The calendar time returns in domestic acquisitions of public subsidiaries are an insignificant 0.07 percent, compared to a significantly negative -0.55 percent in domestic acquisitions of public non-subsidiaries.