

What Drives Acquisitions? Market Valuations and Bidder Performance

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ABSTRACT

Recent debate on the fundamental causes of merger waves has highlighted a significant correlation between merger waves and high stock market valuations. Though this correlation per se is by no means inconsistent with the neoclassical theory of mergers, it becomes particularly fascinating given the recent theoretical development documenting stock market misvaluations' driven acquisitions. In order to shed light on the alternative merger theories, this paper examines market valuations and bidder performance. We focus on hot stock markets and find that bidder reactions to mergers, in both the short and long-run period, are consistent with the predictions of investors' sentiment (optimism) after controlling for target type and method of payment and do not support the neoclassical theory or managers' hubris hypothesis. Managers that undertake mergers during bullish periods are rewarded by the generalized upward trend of the market in the short-run. However, this is followed by long-term reversals as the market learns only gradually that many of the mergers undertaken during hot periods were not carefully evaluated and were made under the pressure of 'urge to merge' to take advantage of the overall market status of a particular period. Our results, thus, support the theory that market misvaluations drive acquisitions.

JEL Classification: G11; G14; G34.

Keywords: Mergers & Acquisitions, Market Valuations, Short and Long-term wealth effects

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1. Introduction

Mergers and acquisitions have been one of the most extensively researched areas in finance with the most recent studies to document evidence that merger activity comes in waves. The literature evaluates a merger based on the initial market reaction to the merger announcement (Asquith, Bruner, and Mullins, (1983)) and on the long-run returns to the merger (Loughran and Vijh, (1997)). Despite the fact that such corporate actions should be viewed as value-enhancing strategic decisions, the empirical studies have not always documented positive wealth effects for acquiring firms' shareholders.¹ The neoclassical theory of mergers, dating back at least to Gort (1969) and modernized by Mitchell and Mulherin (1996), Mulherin and Boone (2000), and Andrade, Mitchell, and Stafford (2001), argues that merger waves emerge to an extent from economic, regulatory and industrial shocks. Given these shocks, mergers facilitate the change of firms to a new competitive environment. Merger activity comes in waves and returns to acquiring firms depend, among others, on the method of payment (Travlos (1987)) on the acquirer's book to market ratio (Rau and Vermaelen (1998)) and size (Moeller, Schlingemann and Stulz (2004) and type of target (Fuller, Netter and Stegemoller (2002)). A more recent strand of the literature attempts to link takeover activity with stock market performance (high merger activity is correlated with high stock market valuations as shown by Nelson (1959) Maksimovic and Phillips (2001) and Jovanovic and Rousseau (2001)). This correlation is particularly interesting since high stock market valuations, which could turn out to be misvaluations as shown by the growing behavioral finance literature, may impact the merger activity in a systematical way.

Studies on the wealth effects of mergers have documented a growing body of long-run anomalies, for example, cash payments systematically outperform stock payments (Loughran and Vijh, (1997)), value acquirers outperform glamour acquirers (Rau and Vermaelen, (1998)), small acquirers have, in general, better performance than large acquirers (Moeller, Schlingemann, and Stulz, (2004)). Along these lines, Shleifer and Vishny (2003) and Rhodes-Kropf and Viswanathan

¹ In the literature the concept 'mergers' differs to the concept 'acquisitions', since the first is usually described as representing a 'friendly' union of two firms of roughly equal size, while the latter implies a more hostile character of a takeover. Note, however, that we use the terms 'mergers' and 'acquisitions' interchangeably in our discussion. In addition, the terms bidder and acquirer are also used interchangeably for the purpose of this study because all the bids in our analysis lead to a completed acquisition.

(2004) develop models which suggest that stock market misvaluations drive merger activity. In their models, the fundamental assumption is that financial markets are inefficient and therefore some firms are valued incorrectly, while bidder managers are completely rational, understand market misvaluations and, hence, time the market to make profits. The market timing theory is, however, directly opposed to Roll's (1986) hubris hypothesis that assumes financial markets are strong-form efficient while bidder managers are infected by hubris in making their merger decisions. On the other hand, Rosen (2006) provides evidence that investors' reaction to a merger announcement can be influenced by their overly optimistic beliefs about the future prospects of the merger. As the author implies, merger momentum could result from investors as a group becoming optimistic about mergers announced during a particular period of time.

The debate on what drives acquisitions is, however, far from over. Harford (2005) examines industrial level merger waves in the past two decades and reports that market timing has little explanatory power in explaining merger waves. He concludes that indeed industrial, technological, and regulatory shocks drive merger waves supporting the neoclassical theory of mergers.

Given the fact that high merger activity correlates with high stock market valuations, the understanding of stock market valuations is therefore crucial to shed light on merger activities and acquirers' performance. In particular, examining the short- and long-run market reactions to mergers in high- and low-valuation periods can facilitate to highlight the importance of market-wide valuations on acquiring firms' stock price performance and thereby draw conclusions on the ongoing debate of merger activities. Since the neoclassical, the managers' hubris, and the investors' sentiment theories respectively, yield different predictions for bidding firm's stock performance under different market valuation conditions, studying bidder returns (both in the short- and long-run) in high- and low-valuation markets can provide new evidence to the debate. Under the neoclassical theory and the assumption that merger waves are responses to common shocks, merger waves and merger momentum (performance) should be highly correlated. We should therefore expect that bidders should react positively to the merger announcement and exhibit no long-run reversal or at least there should be no reason that the post-acquisition bidders' performance should depend on when the merger announcement occurs. Since the market reaction contains all the information about the future prospects of the merging firms there is no reason to

expect the price change to reverse over time. On the other hand, if managers' hubris theory holds, bidders should generate negative abnormal returns since a rational stock market would react to a merger announcement as evidence that a firm may think its stock is overvalued. This would lead to a negative announcement reaction with no long-run drift. Finally, if investors' sentiment (optimism) theory holds, bidders should enjoy larger abnormal returns during high-valuation periods, because the overall state of the market rewards the managers for the 'new information arrival' during a general upward trend, but this should reverse in the long-run as initial expectations may not be fully met when the combined firms' accomplishments become known over time.

Also very importantly, while most, if not all, evidence of the recent debate on merger waves and market valuations is drawn exclusively from U.S. data, it cannot be ruled out that this is limited to the U.S. bearing in mind that merger waves are a universal phenomenon. To determine whether this finding is not sensitive to the choice of the market and robust outside the U.S. we focus our attention on the other side of the Atlantic for U.K. new evidence. We use a sample of 2,973 U.K. domestic public and private acquisitions announced between 1984 and 2003, and examine the performance of acquirers both around the announcement date and in the post-merger period. We choose the U.K. as a representative sample of European evidence as Faccio and Masulis (2005) report that the U.K. accounts for the large majority of European deals (65.3% of their 13 European country mergers are U.K. bidders). In addition, since our study involves to a major extent the examination of method of payment, we are particularly interested in that most U.K. bids are entirely cash financed (80.2% in Faccio and Masulis' sample). This is in sharp contrast with the U.S. practice, Andrade, Mitchell, and Stafford (2001) interestingly report that 70% of U.S. deals are stock financed with 58% being fully stock financed.

Aggregate stock market activity is classified into high-, neutral- or low- valuation periods based on the P/E ratio of the value-weighted market index. Since we are interested in examining overall market valuations, we use the market index P/E ratio as a proxy for market valuations just like a firm's P/E ratio is used by investors to measure a firm's over- or under- valuation. Further to the performance differentials according to market valuations, we investigate the impact of the method of payment, the target public status, the relative size of the target, the book to market ratio of the

bidder and the degree of diversification, in an attempt to identify whether our results are sensitive to various bidder and deal characteristics.

The market reaction to a merger announcement by the shareholders of the bidding firm depends on more than just the potential synergies from the merger. It also depends on whether the managers of bidding firm are able to capture some of the synergies for their shareholders, whether the market anticipates the acquisition, and whether shareholders react rationally to merger announcements. Throughout the remainder of the paper, we assume that bidding firm managers get at least a portion of any surplus and that mergers are not fully anticipated by the market. If these conditions do not hold, then we should see no relationship between hot markets and merger announcement returns.

This study contributes to the literature in several ways. First, our results indicate that corporate acquisitions' performance is an integral component of market wide (mis)valuations. Second, the results support the predictions of overoptimistic investors' beliefs and come in, half, contrast with the neoclassical theory and the managers' hubris hypothesis. We find that bidders generate significantly positive abnormal returns during high-valuation periods while they exhibit insignificant returns during low-valuation periods. This suggests that while the market rewards acquisition attempts when stock prices are high, it appears to be indifferent to acquisitions undertaken in low-valuation periods. On the other hand, bidders generate negative abnormal returns in the long-run for acquisitions initiated during both high- and low-valuation periods. Such results indicate that managers time the market and make profits at the announcement, while they may overestimate the potential synergy gains and the future prospects that are associated with the merger decision. This over-optimism about the synergy gains and the future prospects of the merger is also adopted by investors, who increase the bidder's price at the announcement. The initial generally positive reaction of the market to high-valuation acquirers and the subsequent long-run reversal reflect the market price corrections as investors learn only gradually that many of the mergers undertaken during bullish periods were imprudent and with less care. Third, in general, our results are robust to several acquisition characteristics, industry shocks, macroeconomic conditions, past merger activity and merger waves. Fourth, we investigate whether our findings are a result of market-wide or firm-specific misvaluations and we conclude that the latter do not drive acquisitions for different

valuation periods. Finally, we examine the pre-event performance of acquirers six months preceding the acquisition event and provide evidence that the reversal of patterns for the acquirers is not simply a manifestation of short-term persistence and long-term reversals but mirrors the consequences of acquisitions during specific periods of market valuation.

The rest of the paper is organized as follows. Section 2 reviews the link between market valuations and bidder performance and sets the hypotheses. Section 3 describes the data and the empirical methodology. Section 4 presents and interprets the short-term results. Section 5 reports long-term performance results. Section 6 concludes the paper.

2. Literature Review and Hypotheses Development

2.1. Neoclassical Theory

The neoclassical theory of mergers assumes that managers act to maximize shareholder value. If mergers are concentrated around common shocks that positively affect the potential synergies from all mergers, then mergers following shocks should be better than other mergers. Nelson (1959) and Jovanovic and Rousseau (2001) associate aggregate stock prices and mergers. Nelson (1959) points out that i) mergers are highly concentrated in time, ii) merger waves starting in the late 1800s are associated with stock market booms, and iii) the method of payment is generally stock. Jovanovic and Rousseau (2001) show that this correlation persists through 2000. Both studies suggest that many of the merger waves were caused by changes in the business environment that both increased overall stock prices and led to more profitable merger opportunities. Since mergers represent asset reallocation, merger waves should occur when there is major technological change. When a major new technology arrives, many firms will not be able to easily adapt it, perhaps because their managers and employees have the wrong skills. Such firms become takeover targets for those firms that can take advantage of the new technology. Mitchell and Mulherin (1996) suggest that mergers are clustered around economic and regulatory shocks, and they provide evidence that merger activity varies significantly across industries. Given that most mergers occur following shocks and there is evidence of a positive stock market reaction to mergers (Andrade et al. (2001)), it is likely that common synergies are created due to the shocks,

supporting the neoclassical explanation of merger waves: merger waves occur in response to specific industry shocks that require large scale reallocation of assets.²

However, according to Gugler, Mueller and Yurtoglu (2005), the industry-shocks hypothesis ignores the association that mergers come in waves and that these waves are correlated with stock market bullish periods. They suggest two ways to bring these two patterns together: First, a single exogenous event causes both a series of merger waves in several industries and the stock market boom. Second, the stock market boom itself causes a series of industry merger waves. However, neither Mitchell and Mulherin (1996) nor Harford (2005) mention the association between aggregate merger waves and share prices; without an explanation that links this association to industry shocks their account of merger waves is incomplete. The correlation between aggregate stock prices and mergers could provide support for the neoclassical theory of mergers if a rising stock market reflects an increase in potential merger synergies. In this case, mergers during hot stock markets should be better for bidding firm shareholders than mergers at other times. To sum up, this should be reflected in stock price increases upon a merger announcement with no reversal on average in the long-run.

Hypothesis 1: *Firms engaged in acquisitions under neoclassical theory generate both positive announcement and long-run returns.*

2.2. Managers' Hubris/Overconfidence Theory

Roll's (1986) hubris hypothesis implies that managers engage in acquisitions with an excessive optimism about their ability to create value. Merger announcements signal important new information to the capital markets. Under hubris hypothesis, the announcement of either cash or stock offer indicates overconfidence of bidder management thereby delivering negative news to the market.³ Doukas and Petmezas (2007) suggest that overconfident acquirers (managers), described as firms engaged in many acquisitions during a short span of time, credit their initial success to their

² Harford (2005), however, argues that these shocks are not enough on their own and there must be sufficient capital liquidity to accommodate the asset reallocation.

³ Under hubris hypothesis, stock offer signals management overconfidence infected by excellent pre-bid performance and high valuation of bidder's stock; while cash offer signals management hubris infected by excess cash flows of the bidder.

own ability and as a consequence they exhibit worse performance compared to 'rational' acquirers at the announcement and poor long-term returns.

The managers of bidding firms that had recent success may believe that they can create value in situations that the market judges to be negative net present value. The managers thus want to make acquisitions even when they anticipate the announcement will generate a decline in stock prices. They expect that they will be proved correct in the long-run. Because shareholders have imperfect control, they do not prevent managers from making such acquisitions. If then hubris drives acquisitions, rational shareholders should discount the share price. Since the acquisitions hurt firm value, there is no reason the initial stock price reaction should reverse in the long-run. To sum up, if hot stock markets mean that more firms have overvalued stock, then this could lead to a correlation between hot markets and mergers. In this case, a rational stock market would react to a merger announcement as evidence that a firm may think its stock is overvalued. This would lead to a negative announcement reaction with no long-run drift.

Hypothesis 2: *Firms engaged in acquisitions under managers' hubris/overconfidence theory generate both negative announcement and long-run returns.*

2.3. Investor Sentiment (Optimism) Theory

The third theory we examine is that merger performance results from overly optimistic beliefs on the part of investors. A recent literature suggests that shareholder reaction to a corporate announcement can be affected by investor sentiment, that is, the reaction of investors to factors other than the value created by the merger.⁴ Merger momentum could result from investors as a group becoming optimistic about mergers announced during a particular period of time. Rosen (2006) suggests that investors' reaction to a merger announcement can be influenced by their overly optimistic beliefs about the future prospects of the merger.⁵ Consequently, a common,

⁴ For example, Helwege and Liang (1996) find evidence of overoptimism in hot IPOs markets.

⁵ Our study differs from Rosen's (2006) approach in two main aspects: First, we directly focus on market valuations to examine acquirer's performance, while Rosen examines the performance (momentum) of firms with good (or bad) merger history. Second, we use a U.K. sample while his analysis is based on U.S. data. Our findings are consistent with his arguments and point out that the effect of investors' optimism on acquirer's performance is not a U.S. phenomenon.

positive trend in announcement returns to bidding firms should be observed during periods of market optimism, resulting in merger momentum, i.e. positive returns in the short-run. During hot merger markets, when optimism increases, bidders time the market to take advantage of the uptrend and hence, the market reaction to all announcements should be more positive than at other times.⁶ However, price increases should reverse in the long-run as optimism is replaced by results.

Investor sentiment can also affect the type of acquisitions firms make. Managers may be infected with the same optimism as investors during hot markets. If this is the case, then they might overestimate the synergies from a merger, leading them to make more (ex post) bad acquisitions during hot markets, consistent to the hubris hypothesis discussed above. Alternatively, managers may use hot markets as cover to exploit shareholders. If managers are rewarded for increasing stock prices, then they have an incentive to make bad acquisitions in hot markets, since even a bad acquisition may temporarily boost the acquirer's stock price. When this managerial motivation is important enough, mergers made in hot markets would be worse than those made in cold markets.

If the market reaction to a merger announcement is not based on fundamentals, meaning that behavioural elements drive acquisition decisions, it might also affect merger decisions. Mergers are more frequent when bidders appear to be overvalued (Shleifer and Vishny (2003), Dong, Hirshleifer, Richardson, and Teoh (2006)). Shleifer and Vishny (2003) suggest that if valuations are driven by beliefs, it is possible that managers may make more acquisitions, especially those financed using stock, during inefficient periods of optimism because these offer good opportunities to take advantage of and issue large amounts of stock at an overvalued price (*market timing theory*). In this context, managers are prompted to use their overvalued stock to buy real assets through mergers and hence more acquisitions should take place in stock market booms.⁷ Under this framework, target managers with short time horizons would accept the bidding firm's overvalued equity and seek to secure their earnings before this equity returns closer to its fundamental value.

⁶ In a different context, Loughran, Ritter, and Ryndqvist (1994) suggest that IPO issuers time their issues to take advantage of the optimism of investors in hot markets, implying that the issues in hot markets may be worse than average.

⁷ New stock issues could also abide with this logic, as overvalued firms can raise funds more efficiently. Of course, as Rosen (2006) argues: "there is no reason to believe that, during hot markets, stock issued to purchase capital goods will be less overvalued than stock issued to finance a merger, all else equal. However, it may be difficult to find a worthwhile capital project that involves as much expenditure as a major acquisition. That is, mergers are an efficient way to make large capital purchases with stock".

In other words, both bidding and target firm's managers attempt to time the market for their own interests.

Rhodes-Kropf and Viswanathan (2004) provide an alternative behavioral model, in which rational targets lack perfect information and would accept more offers from overvalued targets during bullish markets, because they overestimate the potential synergies of the merger.⁸ The difference between their model and the model of Shleifer and Vishny (2003) lies mainly in that target management is not self-interested, but has only imperfect information about the degree of synergies at its disposal. In an empirical attempt to establish the former model, Rhodes-Kropf, Robinson and Viswanathan (2005) show that merger activity peaks when market valuations, for which market-to-book ratios act as proxies, are high relative to valuations based on industry multiples. Moreover, there is a long-run reversal, as returns are lower for transactions announced in hot merger markets than for those announced at other times, as initial expectations may not be fully met when the combined firms' accomplishments become known with time.⁹

When swings in acquirer's performance are caused by changes in investors' optimism, any increase in bidders' stock price should reverse in the long-run as beliefs are replaced by results. If managers make worse acquisitions in hot markets (because they are infected by hubris or pursue private benefits or because they optimistically overvalue target firms), then the long-run return to bidders might be negative even with a positive announcement return included. To sum up, if investors are floated up by the general upward stream of the market and become overly optimistic we should expect larger abnormal returns for high-valuation acquisitions in the short-run, as the market rewards the acquirer for the risk of this decision, with reversals in the long-run as the market learns that these decisions were on average bad acquisitions. In other words, the initial generally positive reaction of the market to high-valuation acquirers reflects that the market learns only gradually that many of the mergers undertaken during bullish periods were imprudent and not carefully evaluated.

⁸ When the market-wide overvaluation is high, the estimation error associated with the synergy is high too, so the offer is more likely to be accepted. Thus, when the market is overvalued the target is more likely to overestimate the synergies because it underestimates the component of misvaluation that it shares with the bidders.

⁹ Coakley and Thomas (2004) conclude to the opposite, i.e. investor sentiment does not influence the stock price reaction to merger announcements, as they find positive short run returns irrespective of the state of the market and higher long-run returns for mergers announced during bull markets.

Hypothesis 3: *Firms engaged in acquisitions under investors' sentiment (optimism) theory generate positive announcement returns and negative long-run returns.*

3. Data and Methodology

3.1. Classification of High- and Low- Valuation Markets

Each calendar month is classified as high-, neutral-, or low-valuation month on the basis of the P/E ratio of the value-weighted market index (TOTMKUK).¹⁰ In order to classify each month into a valuation group we first detrend the market (TOTMKUK) P/E by removing the best straight line fit (OLS) from the P/E of the month in question and the five preceding years.¹¹ The month in question is classified into an above (below) average group if its detrended index P/E was above (below) the past five-year average. Then the months are ranked in order of detrended P/E. Months that belong to the top half of the above average group are classified as high-valuation months and those that belong to the bottom half of the below average group are classified as low-valuation months. All remaining months are classified as neutral-valuation months. This procedure leads to 53 high-valuation, 63 low-valuation and 124 neutral-valuation months, respectively.

3.2. Selection Criteria and Sample Description

We examine a sample of 2,973 successful domestic acquisitions by U.K. public companies over the period from January 1st, 1984 to December 31st, 2003.¹² The sample of acquisitions is drawn from the Securities Data Corporation's (SDC) Mergers and Acquisitions Database. The following criteria are used in selecting the final sample:

¹⁰ We collect P/E data from Thomson Financial Datastream. Since Datastream provides data for P/E ratio of FTSE All Share from 1993 onwards, we use the TOTMKUK (Total Market UK), which is the closest index to FTSE All Share (the correlation between these two indices is 99.92%). Jovanovic and Rousseau (2001) find that merger waves coincide with periods of high price-earnings ratios on the stock markets, which is used as a proxy of market valuations. In an independent US study, Bouwman, Fuller and Nain (2005) also employ the P/E ratio of the market index (S&P 500).

¹¹ It is necessary to remove the trend from the market P/E ratio because P/E ratios have trended upwards. Hence, if we do not remove the trend, then this would result in a systematic classification of more recent acquisitions as high-valuation acquisitions and older acquisitions as low-valuation acquisitions. Our results are robust to reasonable changes in the length of the historical data used in the detrending approach.

¹² The exclusion of cross-border deals has been made due to the fact that we examine the performance of bidding firms as a matter of market valuations and the inclusion of deals made in foreign (non-UK) markets with different market/business cycles, corporate governance and regulations would contaminate the analysis.

1. Acquirers are publicly traded U.K. firms, listed on the London Stock Exchange (LSE) and have at least five days of return data around the acquisition announcement for short-run analysis, and one- to three-year return data for the long-run analysis available from the Thomson Financial Datastream.
2. Targets are U.K. public or private firms (including subsidiary firms).
3. The deal value is 1 million USD or more.¹³
4. The acquirer owns less than 50% of the target company's stock before the deal and more than 50% after the deal.
5. We require that the deal value represents at least 1% of the market value of the acquirer. Market value is measured as monthly share price multiplied by the number of ordinary outstanding shares one month before the announcement date.
6. Both bidding and target firms are non-financial and non-utility firms (following Fama and French, (1992)).¹⁴

In addition to these requirements, we also exclude from the analysis clustered acquisitions in which an acquirer announced two or more acquisitions within five days in order to isolate the overlapping effect among deals on bidder returns. The sample is then divided into three subsets based on the method of payment for the acquisition, i.e., pure cash, pure stock, and mixed. Cash acquisitions include transactions made solely in cash, or cash and debt. Stock acquisitions are defined as transactions made solely in common stock. Mixed payment acquisitions consist of all acquisitions in which the payment method is neither pure cash nor pure stock, and methods classified as "other" by SDC.

Table 1 presents the activity of acquisitions among public and private targets, value of acquirer and the value of deals stratified by the acquisitiveness of the acquirer, deal value and method of payment for the different market valuation periods. In numbers, 863 acquisitions announced during high-valuation periods, 1545 during neutral-valuation periods and 565 during low-valuation periods. Hence, higher acquisitiveness is a feature that characterizes high-valuation acquisition firms, as

¹³ We follow Fuller, Netter, and Stegemoller (2002) and Moeller, Schlingemann, and Stulz (2004) and employ a one million dollars cut-off point to avoid results being generated by very small deals.

¹⁴ Fama and French (1992) suggest that the leverage levels of financial firms differ qualitatively from those of non-financial firms when used as an indicator of financial distress.

high-valuation periods are accompanied with greater merger activity (29%) than low-valuation periods (19%). An interesting result that emerges from the sample statistics is that a large fraction of U.K. acquirers engage in cash acquisitions (1609) compared to stock (172) and mixed payment transactions (1192) respectively, consistent with the findings of previous studies based on the U.K. takeover market.¹⁵ Another noticeable observation is that private firms comprise the vast majority of targets (2731) in contrast to the small number of publicly traded targets (242).¹⁶ With respect to the deal value, the percentage of total deal value for high valuation months (34%) is more than double when compared to low valuation months (15%), which corroborates the view that managers “urge to merge” under the pressure of a bullish market. Again in deal value terms, cash deals (47%) outweigh by far stock (21%) and mixed payment (32%) deals, while public targets exhibit a disproportional percentage of total deal value (45%) when considering their small contribution to the total number of acquisitions (8%). These findings could be attributed to managers’ overconfidence/hubris due to the fact that they: i) initiate acquisitions during high-valuation periods when the overall state of share prices is in very high levels; ii) use cash to reflect to the market their budget capacity or iii) buy large companies (public firms are by far larger than private firms (more than double market capitalization)), taking the risk that such a transaction can entail.

[Insert Table 1 About Here]

The cross-examination of valuation period and method of payment (Table 2, Panel A) verifies, very importantly, the well documented reluctance of the bidding firms to pay in stocks when they believe their stock is undervalued (Myers and Majluf, (1984)), as there are more than double stock acquisitions during high-valuation markets (65) than during low-valuation markets (26) (corresponding to 19% and 9% of total deal value, respectively). Panel B of Table 2 reports merger activity by industry and valuation periods. It is evident that most industries experience a higher number of acquisitions during high-valuation periods, presumably in an attempt to take advantage

¹⁵ See for example Faccio and Masulis (2005) and Doukas and Petmezas (2007).

¹⁶ In line with our finding for the respective sample period, Conn, Cosh, Guest and Hughes (2005) report based on data for the period 1985-1998 that privately held targets account for more than 80% of domestic acquisitions, while Faccio and Masulis (2005) report 90% private target acquisitions for the period 1997-2000 and Doukas and Petmezas (2007) document that 91% of UK deals between 1980 and 2004 were privately held acquisitions.

of the good market conditions and/or in order not to be left behind their industry developments. The sample is widely spread across 56 industries.

[Insert Table 2 About Here]

3.3. Methodology

For the short-run analysis, we follow Fuller, Netter, and Stegemoller (2002) and Dong et al. (2006) standard event study methodology and calculate Cumulative Abnormal Returns (CARs) for the five-day (-2, +2) period around the takeover announcement.¹⁷ More specifically, we estimate the abnormal returns by using a modified market-adjusted model:

$$AR_{it} = R_{it} - R_{mt} \quad (1)$$

where R_{it} is the return on firm i and R_{mt} is the value-weighted market index return. The FT-All Share Market Index is used to estimate the market return. This approach amounts to assuming that $\alpha = 0$ and $\beta = 1$ for the firms in our sample.

To sidestep the problem of cross-sectional dependence of sample observations,¹⁸ we employ, similar to Mitchell and Stafford (2000), the Calendar Time Portfolio Regressions (CTPRs) analysis. For each calendar month we form equally weighted portfolios of acquirers which have experienced an acquisition in the last 12, 24 and 36 months. The portfolios are rebalanced each month to drop firms that have reached the end of the 12, 24 or 36-month period, respectively, and add firms that have executed a transaction during the month in question. The average monthly abnormal return during the one- to three-year post-event period is the intercept from the time-series regression of the calendar portfolio return on the Fama and French (1993) three-factor model. We estimate the following model:

¹⁷ Since about 30% of the acquiring firms in our sample engage in frequent acquisitions within 200 days, previous announcements will be included in the estimation period rendering market parameter estimations to an extent biased. Additionally, it has been shown that for short window event studies, weighting the market return by the firm's beta does not significantly improve estimation (Brown and Warner (1980)). However, we do also calculate CARs following Brown and Warner's (1985) standard event study methodology which yields qualitatively similar results that we do not report for brevity.

¹⁸ Cross-sectional dependence caused by overlapping observations leads to downwards-biased standard errors and therefore causes t-statistics to be biased upwards. In addition, according to Mitchell and Stafford (2000), due to the number of firms being different for each month, heteroskedastic residuals are likely to be present when regressing calendar time average portfolio returns in excess of the risk free rate against the factors of an asset-pricing model. Hence, we assess the statistical validity of our results based on heteroskedasticity adjusted standard errors.

$$R_{pt} - R_{ft} = \alpha_i + \beta_i(R_{mt} - R_{ft}) + s_iSMB_t + h_iHML_t + \varepsilon_{it} \quad (2)$$

where R_{pt} is the average monthly return of the calendar portfolio, R_{ft} is the monthly risk free return, R_{mt} is the monthly return of the value-weighted market index, SMB_t the value-weighted return on small firms minus the value-weighted returns on large firms, and HML_t the value-weighted return on high book-to-market firms minus the value-weighted return on low book-to-market firms. In addition, β_i , s_i and h_i are the regression parameters and ε_{it} is the error term. The α is interpreted as the average of the individual firm-specific intercepts.

4. Empirical Results

4.1. Acquirer Announcement Returns and Market Valuations

Table 3 presents five-day CARs by type of acquirer and method of payment. The overall sample amounts to a significant positive CAR of 1.17%, while the sample partitioned by valuation periods yields significant gains for high-valuation acquirers (1.66%) and insignificant returns (0.41%) for low-valuation bidders, suggesting that acquirers were rewarded for such transactions in the former periods only. The sub-analysis by target status shows a striking difference among public and private targets. Bidders of public targets generate significant losses (-1.35%) and those of private targets have significant gains of about the same level (1.42%) for the overall period.¹⁹ The greater acquirer return in private than public targets seems to reflect a liquidity discount for the assets of private targets. On the other hand, acquisitions of large listed firms could signal managerial 'empire-building' incentives and thus leading to negative reactions by investors (Draper and Paudyal, (2006)). However, when we examine the results by valuation periods we find that they are driven by the particular valuation conditions existed in the market since low-valuation public acquisitions lose a significant CAR of -2.43%, while acquisitions undertaken during high-valuation months generate an insignificant return and at least do not lose.

¹⁹ This result is in line with the evidence of Chang (1998), Ang and Kohers (2001), Fuller, Netter and Stegemoller (2002) and Doukas and Petmezas (2007) who document substantial gains in acquisitions of privately held firms. Consistent with the U.S. evidence, U.K. studies (Firth (1980), Draper and Paudyal (1999, 2006), among others) report negative and significant bidder abnormal returns for public acquisitions surrounding merger announcements.

Acquisitions associated with cash and mixed methods of payment have abnormal returns of 0.93% and 1.67%, respectively, and are statistically significant at the 1% level while stock payments generate insignificant returns. The sample partition by means of payment further confirms the impact of market valuations on announcement returns, with cash and mixed offers exhibiting larger gains in high-valuation periods than in low-valuation periods (the return difference is 0.90% for cash payments and 1.63% for mixed offers, respectively and significant at the 5% level). Stock acquisitions result to a negative CAR for public targets in all periods (-2.99%), a result that aligns with the suggestion that a stock payment signals the bidder's perception of its overvalued stock. This effect becomes even more pronounced in unfavourable market conditions, namely low-valuation periods (-5.97%). In addition, the insignificant return of public acquisitions with stock in high-valuation periods shows interestingly that market valuations (reflecting investors' optimism) are over and above the method of payment and firm-specific overvaluation, assumed by the decision of the manager to time the market and pay by the overvalued stock. The higher abnormal returns from private acquisitions that involve stock financing for all valuation periods seem to suggest that target owners value more the tax deferral advantage of stock financing and therefore willing to accept a lower bid. Alternatively, the return difference between cash and stock deals could also reflect the blockholder benefits that might emerge from the acquisition.²⁰

Putting everything together, short-run results support both the neoclassical and the investors' sentiment (optimism) theories that expect positive abnormal returns in the short-run and come in contrast with managers' hubris hypothesis which predicts negative announcement returns. The only way to distinguish which theory holds is to conduct long-run analysis. If the short-run response contains all the information about a merger, the post-announcement abnormal return should be zero on average. Any systematic patterns in the post-announcement abnormal return may be due to investor sentiment. Before we proceed to long-run analysis we carry out a number of robustness checks to verify that our results are not driven by several acquirer and deal characteristics.

[Insert Table 3 About Here]

²⁰ For further discussion see Fuller et al. (2002).

4.2. Acquirer Announcement Returns by Relative size of Target Firm

Table 4 reports acquirer abnormal returns after controlling for the relative size of the target to bidder. Our sample contains both public and private firms, and since private targets are usually smaller than public targets, we partition the sample into two size categories in order to better assess the performance differential occurring from target public status. We define the relative size of the target as the deal value divided by the market value of the acquirer one month prior to the announcement date.

Our results for all bidders in both valuation periods are consistent with the literature, indicating that wealth gains to acquiring firms are declining monotonically with target size.²¹ Further, high-valuation acquisitions generate positive and statistically significant abnormal returns for private targets of small (1.26%) and large (2.73%) relative size, while only private targets have significant gains in low-valuation periods (1.02%). The mean difference between high- and low-valuation acquisitions is statistically significant irrespective of the relative size of the target to bidder.

The sub-analysis according to the method of payment yields similar results to Fuller et al. (2002), with firms acquiring public targets of large relative size with stock to experience significant negative abnormal returns (-5.97%) in low-valuation periods and those acquiring private targets with cash gaining almost double positive abnormal returns as the relative size increases in high-valuation periods (1.00% and 1.94%, for small and large relative size acquisitions, respectively). As noted in the latter study, the fact that private targets are not easily transferred assets is captured in the announcement returns for smaller relative size private targets. Overall, irrespective of the relative size of the target to bidder, acquisitions undertaken during high-valuation periods outperform those initiated during low-valuation periods and drive acquirer's overall positive performance in the short-run.

[Insert Table 4 About Here]

²¹ Rosen (2006) suggests that the relative size of the merging firms affects the magnitude of the synergy. This view is in line with Asquith et al., (1983), Jensen and Ruback, (1983), Travlos (1987), Jarrell and Poulsen, (1989), Servaes (1991) and Fuller et al. (2002) who show that announcement returns increase with the target's relative size to the bidder.

4.3. Acquirer Announcement Returns and Industry Diversification

We further examine the stock market's reaction to mergers with respect to corporate focus. An acquisition is defined as diversified when the acquirer's two-digit SIC code is different from that of the target company.²² Accordingly, all other acquisitions are classified as non-diversifying acquisitions.

Conglomerate expansion is suggested to be driven by managerial 'empire building' motives as well as a way of easily meeting growth expectations (Jensen, (2004)) rather than representing a value-enhancing investment opportunity, a notion that should be reflected in the stock market by the underperformance of diversifying acquisitions. A common finding among several previous studies is that diversifying acquisitions destroy shareholder value.²³ Interestingly, a comparison of Panels A and B of Table 5 reveals that the mean differences in abnormal returns for all bidders and valuation periods appear to be opposite to those predicted by corporate finance theory. Diversifying acquisitions in high-valuation months produced significant abnormal returns of 2.22% as opposed to non-diversifying ones that generate CARs of 1.19%. Moreover, in low-valuation months, bidders that undertake diversifying acquisitions earn a significant CAR of 0.62%, whereas non-diversifying acquisitions do not generate significant abnormal returns. The significance pattern of periods mean difference is again repeated in diversifying acquisitions as high-valuation acquisitions outperform low-valuation acquisitions irrespective of the target status and, in most cases, the method of payment. For non-diversifying acquisitions the pattern is almost similar. Focus preserving bidders of public targets were even found to be penalised by the market (consistent with Matsusaka (1993)) for all valuation periods. To sum up, our results that high-valuation acquisitions generate significantly higher abnormal returns are robust after also controlling for the industry diversification effect.

²² Servaes (1996) points out that a straightforward examination of the 4-digit SIC codes of the segments of the firm does not necessarily reveal the degree of diversification of the firm. He claims that the use of the 4-digit SIC code would be too wide to identify the industrial structure of the firm. Similarly, Kahle and Walkling (1996) display how a 4-digit SIC code firm assigned to a firm might be misleading with regard to the most reasonable 2- or 3-digit classifications

²³ See, for example, Morck, Shleifer and Vishny (1990), Lang and Stulz (1994), Berger and Ofek (1995), Servaes (1996) and Doukas and Kan (2004). However, Jensen and Ruback (1983), Bradley, Desai and Kim (1988), Billett and Mauer (2000), and Hadlock, Ryngaert and Thomas (2001) find that the announcements of diversifying acquisitions are generally associated with small positive abnormal returns.

[Insert Table 5 About Here]

4.4. Acquirer Announcement Returns by Book-To-Market Ratio

The next set of tests involves examining abnormal returns for bidders according to their book-to-market ratio which is defined as the net book value divided by market value one month prior to the announcement date. It has been acknowledged in the literature that the book-to-market ratio of acquiring firms is related to the announcement returns, as it conveys important information about past and potential future bidder's stock performance. Lang, Stulz, and Walkling (1989) and Servaes (1991) provide evidence that high book-to-market ratio is associated with a larger announcement CAR. Rau and Vermaelen (1998) suggest that glamour acquirers (i.e., acquirers with low book-to-market ratio) outperform value ones (i.e., acquirers with high book-to-market ratio) in the short-run. It appears that the market fails to understand that past managerial performance is not necessarily a good indicator of future performance, at least in the case of acquisitions.

Table 6 illustrates that firms with low growth opportunities (low book-to-market ratio) generate significantly larger abnormal returns during high-valuation periods than low-valuation periods (the mean difference for all and private acquisitions is significant at the 1% level) presumably due to market over-optimism towards glamour firms in the former period. This result holds for all bidders and for public targets of 'glamour' acquirers and all methods of payment (except for stock). The returns of high book-to-market acquisitions show that high-valuation bids outperform low-valuation bids on average (the mean difference is statistically insignificant). The market seems to favor reputation in bidders during high-valuation periods, but ignores valuation conditions when reacting in high book-to-market bids. This observation could be attributed to 'glamour' firms' managers attempt to time the market and use their firm's valuation advantage. Overall, our results are robust after controlling for book-to-market effect providing evidence that returns on particular periods (bullish periods) drive the overall acquirer's performance.

[Insert Table 6 About Here]

4.5. Price Run-Up

In order to address the question of whether past performance drives acquisitions, we conduct a price run-up analysis for the high- and low- valuation groups. This analysis is necessary in order to shed light to the way market valuations affect acquirers in relation to firm's performance prior to the

transaction. The acquirer's average abnormal returns are calculated for the 180-day period preceding the event window. The results, presented in Table 7, suggest that overall, there is a price momentum in mergers leading to a positive announcement reaction. In addition, the findings confirm mainly the notion that high-valuation bidders perform better than those in low-valuation periods as acquisitions conducted in high-valuation periods generate a significant positive pre-event average return (0.04%) while low-valuation acquisitions exhibit insignificant pre-event returns with their mean difference (0.03%) being also significant. Investors are optimistic about the prospects of a firm that carries new information to the market (merger) simultaneously with a general upward trend and 'receive' this as value-creating news. Average abnormal returns are, in general, positive and significant for high-valuation periods, irrespective of the target status and method of payment. A closer look at the target public status reveals, nonetheless, that valuation period differentials become more pronounced for public acquirers, as the high-valuation group experiences significant positive abnormal returns prior to the acquisition (0.06%), while the low-valuation group generates insignificant negative returns (-0.02%). This finding indicates that public acquirers are induced by their past good market performance to engage in acquisitions during boom periods. When we partition the sample on the basis of the form of financing, we find that stock payments exhibit the highest overall returns (0.10%), and the largest valuation mean differences (0.13%) compared to the cash (0.01%) and mixed (0.04%) forms of payment. The stock payment returns are even more pronounced in high-valuation periods (0.14%, 0.12% and 0.16% for all, public, and private acquisitions, respectively). This finding is in conjunction with our announcement results and could be explained by the fact that stock acquirers with high pre-announcement returns might be more likely to use their overvalued stock as a means of payment.

[Insert Table 7 About Here]

4.6. Cross-section Regression Analysis

The results from the univariate tests indicate that high-valuation bidders realize considerably larger announcement returns than low-valuation acquirers. In addition, acquirers, overall, appear to produce positive announcement returns. These results could be attributed to both the neoclassical theory -since a rising stock market reflects an increase in potential merger synergies- and the investors' optimism theory, as investors who are floated up by the general upward stream of the

market and become overly optimistic should also generate large announcement returns. To better examine the impact of market valuations on acquirers' performance around acquisition announcements, we adopt a multiple regression framework, where we employ high-valuation and low-valuation acquisition measures and various acquisition characteristic controls as independent variables. The dependent variable is the acquirer's five-day cumulative abnormal return.

Specifically, we conduct cross-sectional regression analysis of acquirers' abnormal returns to examine whether differences in acquirer and deal characteristics explain the abnormal return differences found in high- and low-valuation acquisitions. We include a dummy variable that takes the value of one if the deal was conducted by a bidder within a high-valuation month and zero otherwise. We refer to this binary variable as high-valuation deals dummy. We also include a low-valuation deals dummy, defined as a binary variable that takes the value of one if the deal took place within a low-valuation month and zero otherwise. Since mergers tend to take place in concentrated time periods (waves) and macroeconomic conditions, we include controls for past merger activity $t-1$, defined as the log of one plus the number of mergers during the 6-month pre-announcement period, acquirer's return $t-1$, defined as the average 6-month pre-event return and, most importantly, market return $t-1$, measured as the average 6-month pre-event return of the market index. The last variable offers an alternative way to measure whether market valuations drive acquisition performance. In addition, the following independent variables which have been suggested by theory as key determinants of the market's perception of an acquisition are considered: cash deals, which is an indicator variable taking the value of one for cash and debt acquisition deals and zero otherwise, common stock deals, which is an indicator variable taking the value of one for stock acquisition deals and zero otherwise, diversification deals, which is an indicator variable taking the value of one when the acquirer and target are not from the same industry and zero otherwise using the two-digit SIC codes, book-to-market ratio, calculated as the acquirer's market value divided by its net book value one month prior to the acquisition announcement, target's relative size, defined as the log of the deal value to acquirer's market value one month before the acquisition announcement date, acquirer's size, defined as the log of acquirer's market value one month before the acquisition announcement date.

The results are reported in Table 8. The first regression specification relates acquirers' abnormal returns of all acquisitions respectively to several acquirer and deal characteristics. The coefficients of regression (1) for all acquisitions display that the diversification variable, the relative size of the target, the acquirer return $r_{i,t-1}$ and the market return $r_{m,t-1}$ have a significantly positive relation with acquirer's CARs, which means that the market views larger deals, acquisition in different industries, and firms that experienced a price run-up even more favourably. Finally, very importantly, the acquirer's return increases with the returns of the market, which indicates stock market driven acquisitions.

Given the results from the univariate analysis, both the neoclassical and investors' optimism theories predict that high-valuation periods will be associated with positive CARs, while low-valuation periods should have no relation with any acquirers' gains. Consistent with the results from the univariate tests, regression (2) for all acquisitions shows that high-valuation acquirers have a positive and significant association with abnormal announcement returns. The dummy variable indicating high-valuation deals carries a coefficient of 0.011 and is statistically significant at the 1% level, suggesting that the market offers a premium to high-valuation acquirers by approximately 1.1% over the five-day window. On the other hand the low-valuation deals dummy carries a negative but insignificant coefficient. In regression (3), which includes the control variables, the coefficient of the high-valuation deals variable is again 0.011 and is also statistically significant at the one percent level. This suggests that after controlling for deal and acquirer characteristics high-valuation acquisitions are associated with an abnormal return that is 1.1% larger than that of other valuation periods. In addition, the coefficient of the market return is also positive and significant suggesting that the market favours acquisitions undertaken when its valuation increases. The same significant sign is reported for acquirer return over the pre-event period and relative size of the target to bidder as the market reacts positively with firms that experienced good past performance and with larger deals. All other variables, including merger activity, are insignificant. Overall the results indicate that deal characteristics have no distinct bearing on abnormal returns five days surrounding the acquisition announcement. This evidence provides additional support for the theoretical prediction of the neoclassical theory and investors' optimistic beliefs. Further, these new findings substantiate our previous evidence suggesting that particular valuation periods drive

acquirer's performance. As we have already discussed, the neoclassical theory implies that if mergers are concentrated in periods following shocks then there can be positive autocorrelation in announcement returns. Since the shocks can boost overall stock prices, the CAR can be positively correlated with recent returns in the stock market. Over-optimism predicts the same relationships but for different reasons. Optimism about mergers overall generates a positive autocorrelation in announcement returns while overall optimism about firms can lead to a positive correlation between CARs and the returns in the stock market. There is no way, however, of using the announcement results to distinguish these two hypotheses. A long-run analysis is therefore essential in order to draw fruitful conclusions about the real source of market valuations effect on acquirer's performance.

[Insert Table 8 About Here]

5. Post-acquisition Long-term Performance

5.1. Acquirer Post-Acquisition Returns and Market Valuations

We have reported that bidders engaged in acquisitions during high-valuation periods generate superior abnormal returns relative to acquirers that made acquisitions during low-valuation periods. We have also shown that our announcement results source from either the neoclassical or the investors' sentiment theory, respectively. Extending our horizon to the long-run allows us to test the neoclassical theory against over-optimism. If the neoclassical theory is correct, then the CAR should be an unbiased estimate of the value of the merger. There should be no trend in returns in the post-announcement period and therefore we should expect that the overall positive announcement returns will sustain in the long-run. However, if the relationship between the CAR and the valuation variables occurs because of over-optimism, then we should see a reversal of the CAR over time as the merged company begins to have a track record. Hence, to assess whether the difference in stock price performance between high-valuation and low-valuation acquisitions, respectively, is consistent with the expectation of the market, we examine the post-acquisition stock price performance of acquirers.

If bidders generate higher returns by engaging in high-valuation acquisitions than managers that engage in low-valuation acquisitions, time-series portfolios of high-valuation acquirers should be associated with higher returns relative to an explicit asset pricing model. Fama and French

(1993) suggest that a three-factor model may explain the time series of stock returns. While several researchers argue that the size and book-to-market factor-mimicking portfolios may not represent risk factors, we basically use the Fama-French (1993) three-factor model to assess whether high-valuation acquirers earn higher returns for bearing additional risks. We use the intercept from the time-series regressions of the high-valuation and low-valuation acquirers to measure whether the latter earn higher returns for bearing additional risk controlling for market, size, and book-to-market effects.²⁴ Intercepts are estimated for 1 and 3 years subsequent to the acquisition announcement.

Table 9 reports the regression results. An interesting finding that emerges from the 3-year long-term performance analysis and in sharp contrast with the announcement returns is that most intercepts for both high- and low-valuation acquirers are negative and statistically significant at conventional levels. The negative magnitude of the intercepts systematically increases, as we move from the first to the third year after the acquisition, indicating that the post-acquisition stock price performance deteriorates with time. The same pattern exists for all financing deals (except for cash). The market's positive or non-negative reaction to acquisition announcements in comparison to the harmful post-acquisition stock performance points out that the market overestimates the operational efficiencies and synergy gains for both high- and low-valuation acquisitions. The market learns only gradually that many of the mergers undertaken during bullish periods were not carefully evaluated and were indeed bad deals. In summary, this differential between market anticipation and post-acquisition stock performance suggests that the market, on average, was optimistic about the future prospects of these mergers rejecting the predictions of the neoclassical theory.²⁵

Interestingly, this result is not driven by public deals as they generate insignificant returns. However, public acquisitions with stock are negative and significant (-1.98%), with stock deals undertaken during high-valuation periods being on average more negative than low-valuation stock acquisitions. This evidence is in line with the view that during stock market booms, managers are more likely to be affected by hubris and get involved in fame-enhancing but value-destroying acquisitions. Public acquisitions are ideal in this context, since they are more exposed to the

²⁴ While the intercept in these regressions appears to be similar in spirit to Jensen's alpha in the context of CAPM, which controls for size and book-to-market factors in addition to the overall market factor, we do not interpret it as a measure of portfolio performance attribution.

²⁵ Note that our evidence does not suggest that mergers by no means occur as a result of shocks. There may also be other driving force, for example shocks may lead to optimism on part of investors.

spotlight and therefore increase managerial reputation. Moreover, such acquisitions correspond to much larger transaction and bidder equity values, and hence the market's valuation effect is more pronounced. Private acquisitions, on the other hand, generate overall negative abnormal returns and lose more wealth when the transaction is announced in low-valuation periods. Overall, our results are consistent with the hypothesis that high-valuation acquirers' returns are caused by investors' over-optimism, possibly in addition to other factors.

[Insert Table 9 About Here]

5.2. Acquirer Post-Acquisition Returns by Book-to-Market

The post-merger results obtained so far could be explained as market valuation periods are just proxies for firm valuation. According to Rau and Vermaelen (1998), if firm-specific misvaluations hold, we would expect acquirers with high book-to-market to outperform those with low book-to-market in the long-run. To clarify whether acquirer's long-term performance is due to market-wide (mis)valuations or firm-specific (mis)valuations, we partition our sample equally into high, medium and low book-to-market acquirers, according to their book-to-market ratio one month prior to the acquisition announcement. Each sub-sample is again split into high- and low-valuation periods and we investigate the performance of acquirers for each of these three book-to-market categories. The results for the 1- and 3-year post-event windows are presented in Table 10. Overall, acquirers seem to generate in most cases insignificant abnormal returns irrespective of the book-to-market category for both high- and low-valuation acquisitions. When we examine the return differentials between the high and low book-to-market acquirers' returns in both high- and low-valuation periods we find insignificant mean differences. Hence, we conclude that firm-specific misvaluations do not drive acquisitions for different valuation periods.

[Insert Table 10 About Here]

5.3. Acquirer Post-Acquisition Returns and Price Reversals

In this section we investigate whether our long-run stock return results are caused by long-term price reversals (Jegadeesh and Titman, (1993)). It could be argued that our general finding that high-valuation acquirers exhibit positive abnormal returns around the announcement date but negative and significant abnormal returns in the long-run reflects short-run persistence followed by long-term reversals. In other words, for firms that experienced positive returns for some months

prior to the acquisition (high-valuation acquisitions), it could be the case that stock prices of these acquirers are subject to a brief period of persistence followed by long-term negative returns.

To investigate this, we firstly measure the pre-announcement performance of each bidder during high- and low-valuation periods. Specifically, for each acquirer, we calculate its calendar time abnormal returns for the six months preceding the acquisition announcement. Acquisitions of high- and low-valuation bidders are ranked according to their pre-event abnormal returns and placed into two equal groups (i.e., top and bottom groups). As a result, we sort our sample into four categories: i) High-valuation acquisitions that experience the highest pre-event abnormal returns, ii) High-valuation acquisitions that exhibit the lowest pre-event abnormal returns, iii) Low-valuation acquisitions that experience the highest pre-event abnormal returns, and iv) Low-valuation acquisitions that exhibit the lowest pre-event abnormal returns. If our results are simply a manifestation of momentum and reversals and have nothing to do with the period the acquisition was undertaken, then any support or contradiction of our interpretation will be shown for acquirers that have experienced extremely high or low pre-event returns. Hence, if price reversals drive our long-run results, we expect that high- (low-) valuation acquirers that generated high pre-event returns should have negative post-acquisition performance and those who experienced the lowest pre-event returns to have positive post-acquisition performance.

The results are presented in Table 11. For high-valuation acquirers that experienced the largest 6-month pre-event returns (4.95%), the 3-year long-run returns are negative and significant (-0.54%). This pattern could be attributed to price reversals. However, high-valuation acquirers that experienced the most negative abnormal pre-event returns (-2.86%) still exhibit poor performance in the long-run (-0.36%). These negative returns cannot be attributed to price reversals, as those firms were found to perform also poorly prior to the acquisition announcement. Similarly, for low-valuation acquirers that had the lowest pre-event returns (-2.35%), and those with the highest pre-event returns (2.87%), post-event performance is also negative and significant (-1.22% and -0.39%, respectively) reflecting that our results are not an outcome of price reversals. Therefore it can be argued that market valuations affect managerial decisions with respect to the quality of the acquisition and lead the acquirer's performance.

[Insert Table 11 About Here]

6. Conclusion

This paper examines whether market misvaluations drive acquisitions or acquirers' returns. Specifically, we focus on hot markets and address the fundamental question of whether acquirers' performance is due to economic, regulatory and/or industrial shocks (neoclassical theory), managers' overconfidence (hubris hypothesis) or investors' sentiment (optimism) about the future prospects of the merger. We test these three hypotheses and conclude that optimistic beliefs of investors over bullish periods drive acquisitions' performance. If market participants are optimistic about the synergies that will occur from the merger, then they will bid up the stock of the merging firms. However, as the performance of the merged firm is revealed over time, investors may revise their views about the quality of the merger, losing their optimism. To explain the sources of larger high-valuation returns at the announcement, we look the long-run stock returns of acquiring firms. Acquisitions announced during stock market boom periods lead to long-run declines in the bidder's stock price. Overall, the results show that, *ceteris paribus*, the positive short-run reaction to an announcement is fully reversed over the next one to three years. Our results are not sensitive to firm-specific misvaluations and various acquisition and deal characteristics.

These findings of course do not imply that investor sentiment is the only driving force of acquirer's returns. Our results have important implications for contracting practices and organizational design. In a sense, managerial motives are likely to be additionally included in the acquisition decision. If investors have unrealistic expectations about the synergies from a merger, that still does not explain why a manager should make an acquisition. Manager's compensation may initiate managers to conduct further -even bad- acquisitions to take advantage of the increase in firm's stock announcement returns, according to their previous experience in conduction of acquisitions. This could be an alternative explanation to positive announcement returns in the short-run for high-valuation acquisitions followed by negative post-returns in the long-run.

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Table 1. Summary Statistics of Acquisitions

This table presents summary statistics of 2973 completed domestic acquisitions made by U.K. publicly traded firms during the 1984 to 2003 period. The table reports the number of acquisitions, the mean and median market value of acquirers and the mean and median transaction value of the acquisition. The last three columns list the total deal value and the percentage of total value of transaction and number of acquisitions, respectively. Acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Targets are UK public, private and subsidiary firms. Using monthly data from 1984 till 2003, each month is classified through this period as a high- (low-) valuation month if the detrended market P/E of that month belongs to the top (bottom) half of all detrended P/Es above (below) the past five-year average. All other months are classified as neutral-valuation acquisitions. The summary statistics are further divided by method of payment. Cash acquisitions include transactions made solely in cash, or cash and debt. Stock acquisitions are defined as transactions made solely in common stock. Mixed payment acquisitions consist of all acquisitions in which the payment method is neither pure cash nor pure stock, and methods classified as "other" by SDC.

Type of Acquisition	Number of Acquisitions	Mean Market Equity (£ mln)	Median Market Equity (£ mln)	Mean Transaction Value (£ mln)	Median Transaction Value (£ mln)	Total Deal Value (£ mln)	% of Total Deal Value	% of Total Number of Acquisitions
All Deals	2973	302.06	83.44	32.34	5.85	96165.01	100	100
High-Valuation	863	367.99	97.40	38.16	7.60	32933.13	34.25	29.03
Neutral-Valuation	1545	284.53	75.67	31.84	5.40	49200.92	51.16	51.97
Low-Valuation	565	249.30	74.34	24.83	5.50	14030.96	14.59	19
Cash	1609	352.25	96.53	27.97	5.50	45012.96	46.81	54.12
Stock	172	358.71	55.01	118.19	13.05	20328.59	21.14	5.79
Mixed	1192	226.14	70.35	25.86	6.00	30823.46	32.05	40.09
Public	242	895.72	194.22	181.48	39.21	43917.72	45.67	8.14
Private	2731	249.45	76.52	19.13	5.05	52247.29	54.33	91.86
High-Valuation Cash	472	454.42	110.37	37.69	7.49	17791.06	54.02	54.69
High-Valuation Stock	65	452.06	63.99	94.51	12.86	6143.27	18.65	7.54
High-Valuation Mixed	326	226.09	87.21	27.60	7.52	8198.80	27.32	37.77
Neutral-Valuation Cash	814	319.50	95.61	23.37	4.75	19023.06	38.66	52.69
Neutral-Valuation Stock	81	341.51	58.38	159.00	15.54	12879.16	26.18	5.24
Neutral-Valuation Mixed	650	233.63	64.10	26.62	5.66	17298.70	35.16	42.07
Low-Valuation Cash	323	285.47	81.63	25.38	5.50	8209.49	58.51	57.17
Low-Valuation Stock	26	178.88	30.82	50.24	6.88	1306.16	9.31	4.60
Low-Valuation Mixed	216	203.70	72.00	20.95	5.50	4525.96	32.25	38.23
High-Valuation Public	90	1126.40	221.85	179.75	51.02	16177.43	49.12	10.43
High-Valuation Private	773	279.69	89.93	21.68	6.00	16755.70	50.88	89.57
Neutral-Valuation Public	111	804.27	191.24	208.08	33.22	23097.36	46.94	7.18
Neutral-Valuation Private	1434	244.30	72.21	18.20	4.75	26103.56	53.06	92.82
Low-Valuation Public	41	636.96	110.76	113.24	30.00	4642.93	33.09	7.26
Low-Valuation Private	524	218.97	72.41	17.92	5.00	9388.03	66.91	92.74

Table 2. Financing Characteristics and Merger Activity by Industry

This table reports in Panel A financing characteristics by year of completed UK public, private and subsidiary acquisitions made by UK acquiring firms. Acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Using monthly data from 1984 till 2003, each month is classified through this period as a high- (low-) valuation month if the detrended market P/E of that month belongs to the top (bottom) half of all detrended P/Es above (below) the past five-year average. All other months are classified as neutral-valuation acquisitions. Cash acquisitions include transactions made solely in cash, or cash and debt. Stock acquisitions are defined as transactions made solely in common stock. Mixed payment acquisitions consist of all acquisitions in which the payment method is neither pure cash nor pure stock, and methods classified as "other" by SDC. Panel B displays the number and percentage of acquirers and targets by industry in high- and low-valuation periods respectively, over the 1984 and 2003 period. Industry data are organized using the acquirer and target MID description provided by the SDC database.

Panel A: Financing Characteristics

Valuation Period	Year	Cash		Stock		Mixed		Year Total
		N	%	N	%	N	%	
	1984	2	100%					2
	1985	2	67%	1	33%			3
	1988	66	65%	3	3%	32	32%	101
	1989	14	56%	3	12%	8	32%	25
	1990	83	65%	6	5%	39	30%	128
Low	1991	10	77%	1	8%	2	15%	13
	1995	20	49%	1	2%	20	49%	41
	1996	24	45%	6	11%	23	44%	53
	1997	4	33%			8	67%	12
	2001	3	25%			9	75%	12
	2002	36	51%	4	6%	31	43%	71
	2003	59	57%	1	1%	44	42%	104
L Total		323	57%	26	5%	216	38%	565
	1986	9	69%	3	23%	1	8%	13
	1987	55	63%	22	25%	10	12%	87
	1992	15	60%	1	4%	9	36%	25
High	1993	27	39%	6	9%	37	52%	70
	1994	14	52%	3	11%	10	37%	27
	1998	118	66%	7	4%	55	30%	180
	1999	131	53%	10	4%	108	43%	249
	2000	103	49%	13	6%	96	45%	212
H Total		472	55%	65	8%	326	37%	863
Total		795	56%	91	6%	542	38%	1428

Panel B: Merger Activity by Industry

Industry	High-Valuation				Low-Valuation			
	Acquirers		Targets		Acquirers		Targets	
	N	%	N	%	N	%	N	%
Advertising & Marketing	32	3.71	13	1.51	17	3.01	16	2.83
Aerospace & Defense	7	0.81	9	1.04	7	1.24	7	1.24
Agriculture & Livestock	2	0.23	1	0.12	5	0.88	4	0.71
Apparel Retailing	8	0.93	10	1.16	3	0.53	1	0.18
Automobiles & Components	30	3.48	22	2.55	30	5.31	18	3.19
Automotive Retailing	26	3.01	30	3.48	17	3.01	23	4.07
Broadcasting	16	1.85	14	1.62	5	0.88	3	0.53
Building/Construction & Engineering	57	6.60	49	5.68	40	7.08	46	8.14
Cable	1	0.12	-	-	-	-	-	-
Casinos & Gaming	8	0.93	-	-	4	0.71	2	0.35
Chemicals	16	1.85	10	1.16	21	3.72	18	3.19
Computers & Electronics Retailing	2	0.23	2	0.23	2	0.35	1	0.18
Computers & Peripherals	3	0.35	11	1.27	7	1.24	13	2.30
Construction Materials	25	2.90	23	2.67	18	3.19	16	2.83
Containers & Packaging	14	1.62	11	1.27	16	2.83	7	1.24
Discount and Department Store Retailing	5	0.58	2	0.23	3	0.53	2	0.35
E-commerce / B2B	-	-	-	-	-	-	3	0.53
Educational Services	6	0.70	8	0.93	2	0.35	3	0.53
Electronics	6	0.70	13	1.51	10	1.77	11	1.95
Employment Services	10	1.16	9	1.04	4	0.71	8	1.42
Food & Beverage Retailing	32	3.71	38	4.40	13	2.30	18	3.19
Food and Beverage	40	4.63	35	4.06	32	5.66	25	4.42
Home Furnishings	5	0.58	11	1.27	4	0.71	12	2.12
Home Improvement Retailing	4	0.46	7	0.81	3	0.53	6	1.06
Hotels and Lodging	11	1.27	15	1.74	9	1.59	14	2.48
Household & Personal Products	-	-	3	0.35	3	0.53	4	0.71
Internet and Catalog Retailing	4	0.46	1	0.12	1	0.18	-	-
Internet Software & Services	1	0.12	-	-	7	1.24	10	1.77
IT Consulting & Services	29	3.36	25	2.90	22	3.89	15	2.65
Legal Services	-	-	2	0.23	-	-	-	-
Machinery	23	2.67	21	2.43	28	4.96	28	4.96
Metals & Mining	22	2.55	17	1.97	24	4.25	18	3.19
Motion Pictures / Audio Visual	5	0.58	6	0.70	4	0.71	4	0.71
Non Residential	12	1.39	119	13.79	-	-	9	1.59
Other Consumer Products	26	3.01	28	3.24	11	1.95	22	3.89
Other Industrials	26	3.01	26	3.01	13	2.30	24	4.25
Other Materials	4	0.46	8	0.93	1	0.18	5	0.88
Other Media & Entertainment	-	-	-	-	-	-	1	0.18
Other Real Estate	94	10.89	19	2.20	23	4.07	6	1.06
Other Retailing	5	0.58	9	1.04	6	1.06	5	0.88
Other Telecommunications	-	-	-	-	-	-	1	0.18
Paper & Forest Products	7	0.81	11	1.27	-	-	1	0.18
Professional Services	34	3.94	47	5.45	46	8.14	49	8.67
Publishing	35	4.06	39	4.52	28	4.96	26	4.60
Real Estate Management & Development	11	1.27	4	0.46	2	0.35	1	0.18
Recreation & Leisure	11	1.27	18	2.09	10	1.77	9	1.59
REITs	43	4.98	9	1.04	3	0.53	1	0.18
Residential	-	-	5	0.58	-	-	-	-
Semiconductors	2	0.23	4	0.46	3	0.53	2	0.35
Software	36	4.17	43	4.98	21	3.72	17	3.01
Space and Satellites	2	0.23	4	0.46	-	-	6	1.06
Telecommunications Equipment	10	1.16	4	0.46	6	1.06	1	0.18
Telecommunications Services	2	0.23	19	2.20	2	0.35	10	1.77
Textiles & Apparel	17	1.97	19	2.20	15	2.65	10	1.77
Transportation & Infrastructure	24	2.78	10	1.16	12	2.12	1	0.18
Travel Services	12	1.39	-	-	2	0.35	2	0.35

Table 3. Short-run Cumulative Abnormal Return (CAR) of Acquirers by Valuation Periods

The table presents the Cumulative Abnormal Returns (CARs) for bidders that acquired public, private and/or subsidiary UK targets over the 1984 and 2003 period. Cumulative abnormal returns are calculated for the 5 days [-2, +2] around the announcement day (day 0) of a takeover. Abnormal Returns are estimated using a modified market-adjusted model: $AR_{it} = R_{it} - R_{mt}$, where R_{it} is the Return on firm i and R_{mt} is the Value Weighed Market Index Return. All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Results are partitioned by valuation period to acquisitions undertaken during high- and low-valuation periods respectively. Using monthly data from 1984 till 2003, each month is classified through this period as a high- (low-) valuation month if the detrended market P/E of that month belongs to the top (bottom) half of all detrended P/Es above (below) the past five-year average. All other months are classified as neutral-valuation acquisitions. The results are further divided by the method of payment. Cash acquisitions include transactions made solely in cash, or cash and debt. Stock acquisitions are defined as transactions made solely in common stock. Mixed payment acquisitions consist of all acquisitions in which the payment method is neither pure cash nor pure stock, and methods classified as “other” by SDC. The number of bids is reported below the mean. H-L (High minus Low) column represents the differences in mean short-run CARs for the five days [-2, +2] around the announcement day (day 0) of a takeover. ^a Denotes significance at the 1% level; ^b Denotes significance at the 5% level; ^c Denotes significance at the 10% level. P-values are provided in parenthesis.

	All				Cash				Stock				Mixed			
	All	High	Low	H-L	All	High	Low	H-L	All	High	Low	H-L	All	High	Low	H-L
All	1.17% ^a	1.66% ^a	0.41%	1.25% ^a	0.93% ^a	1.29% ^a	0.39%	0.90% ^b	0.22%	1.00%	-1.71%	2.71%	1.67% ^a	2.32% ^a	0.69%	1.63% ^b
	1428	863	565	(0.001)	795	472	323	(0.038)	91	65	26	(0.183)	542	326	216	(0.025)
Public	-1.35% ^c	-0.86%	-2.43% ^b	1.57%	-0.44%	-0.01%	-1.14%	1.13%	-2.99% ^c	-1.82%	-5.97% ^b	4.15%	-0.98%	-0.94%	-1.12%	0.18%
	131	90	41	(0.254)	55	34	21	(0.473)	39	28	11	(0.169)	37	28	9	(0.960)
Private	1.42% ^a	1.96% ^a	0.63% ^b	1.33% ^a	1.03% ^a	1.40% ^a	0.50%	0.90% ^b	2.64% ^b	3.14% ^c	1.40%	1.74%	1.87% ^a	2.63% ^a	0.77%	1.86% ^b
	1297	773	524	(0.001)	740	438	302	(0.047)	52	37	15	(0.483)	505	298	207	(0.014)

Table 4. Short-run Cumulative Abnormal Return (CAR) of High-Valuation Vs Low-Valuation Acquirers by the Relative Size of the Target

The table presents the Cumulative Abnormal Returns (CARs) for bidders that acquired public, private and/or subsidiary UK targets over the 1984 and 2003 period. Cumulative abnormal returns are calculated for the 5 days [-2, +2] around the announcement day (day 0) of a takeover. Abnormal Returns are estimated using a modified market-adjusted model: $AR_{it} = R_{it} - R_{mt}$, where R_{it} is the Return on firm i and R_{mt} is the Value Weighed Market Index Return. All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Panel A represents acquisitions with small relative size of target to bidder and Panel B with large relative size of target to bidder, respectively. The relative size of the target is defined as the deal value divided by the market value of the acquirer. The Acquirer Market Value (MV) is the monthly share price multiplied by the number of ordinary shares (as reported in Datastream) the month before the announcement date. We rank acquirers' relative size (deal value to acquirer's market value one month prior to the announcement date) and then we classify the ones above (below) the sample relative size median as large (small) relative size. Results are partitioned by valuation period to acquisitions undertaken during high- and low-valuation periods respectively. Using monthly data from 1984 till 2003, each month is classified through this period as a high- (low-) valuation month if the detrended market P/E of that month belongs to the top (bottom) half of all detrended P/Es above (below) the past five-year average. All other months are classified as neutral-valuation acquisitions. The results are further divided by the method of payment. Cash acquisitions include transactions made solely in cash, or cash and debt. Stock acquisitions are defined as transactions made solely in common stock. Mixed payment acquisitions consist of all acquisitions in which the payment method is neither pure cash nor pure stock, and methods classified as "other" by SDC. The number of bids is reported below the mean. H-L (High minus Low) column represents the differences in mean short-run CARs for the five days [-2, +2] around the announcement day (day 0) of a takeover. ^a Denotes significance at the 1% level; ^b Denotes significance at the 5% level; ^c Denotes significance at the 10% level. P-values are provided in parenthesis.

	All			Cash			Stock			Mixed		
	High	Low	H-L	High	Low	H-L	High	Low	H-L	High	Low	H-L
Panel A: Small Relative Size												
All Bidders	1.23% ^a	0.21%	1.02% ^b	0.99% ^a	0.59% ^c	0.40%	1.69%	-1.74%	3.44% ^c	1.60% ^c	-0.27%	1.88% ^c
	418	281	(0.033)	258	171	(0.402)	22	8	(0.053)	138	102	(0.086)
Public Targets	0.38%	-1.78%	2.16%	0.61%	-1.79%	2.40%	0.42%	-	-	-0.22%	-1.77%	1.55%
	13	9	(0.366)	7	6	(0.490)	3	-	-	3	3	(0.786)
Private Targets	1.26% ^a	0.27%	0.99% ^b	1.00% ^a	0.67% ^b	0.33%	1.90%	-1.74%	3.64%	1.64% ^c	-0.23%	1.87% ^c
	405	272	(0.045)	251	165	(0.502)	19	8	(0.049)	135	99	(0.093)
Panel B: Large Relative Size												
All Bidders	2.07% ^a	0.61%	1.46% ^b	1.67% ^a	0.18%	1.49% ^b	0.64%	-1.70%	2.35%	2.85% ^a	1.55% ^b	1.30%
	445	284	(0.016)	214	152	(0.049)	43	18	(0.421)	188	114	(0.186)
Public Targets	-1.07%	-2.62%	1.54%	-0.17%	-0.88%	0.71%	-2.09%	-5.97% ^b	3.88%	-1.02%	-0.79%	-0.23%
	77	32	(0.341)	27	15	(0.704)	25	11	(0.223)	25	6	(-0.963)
Private Targets	2.73% ^a	1.02% ^b	1.71% ^a	1.94% ^a	0.30%	1.64% ^b	4.44%	5.00%	-0.56%	3.45% ^a	1.68% ^b	1.77% ^c
	368	252	(0.009)	187	137	(0.044)	18	7	(0.903)	163	108	(0.088)

Table 5. Short-run Cumulative Abnormal Return (CAR) of High-Valuation Vs Low-Valuation Acquirers by Diversifying/Non-Diversifying Acquisitions

The table presents the Cumulative Abnormal Returns (CARs) for bidders that acquired public, private and/or subsidiary UK targets over the 1984 and 2003 period. Cumulative abnormal returns are calculated for the 5 days [-2, +2] around the announcement day (day 0) of a takeover. Abnormal Returns are estimated using a modified market-adjusted model: $AR_{it} = R_{it} - R_{mt}$, where R_{it} is the Return on firm i and R_{mt} is the Value Weighted Market Index Return. All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Panel A represents diversifying acquisitions and Panel B non-diversifying acquisitions, respectively. An acquisition is defined as diversified when the acquirer's two-digit SIC code is different from that of the target company. Results are partitioned by valuation period to acquisitions undertaken during high- and low-valuation periods respectively. Using monthly data from 1984 till 2003, each month is classified through this period as a high- (low-) valuation month if the detrended market P/E of that month belongs to the top (bottom) half of all detrended P/Es above (below) the past five-year average. All other months are classified as neutral-valuation acquisitions. The results are further divided by the method of payment. Cash acquisitions include transactions made solely in cash, or cash and debt. Stock acquisitions are defined as transactions made solely in common stock. Mixed payment acquisitions consist of all acquisitions in which the payment method is neither pure cash nor pure stock, and methods classified as "other" by SDC. The number of bids is reported below the mean. H-L (High minus Low) column represents the differences in mean short-run CARs for the five days [-2, +2] around the announcement day (day 0) of a takeover. ^a Denotes significance at the 1% level; ^b Denotes significance at the 5% level; ^c Denotes significance at the 10% level. P-values are provided in parenthesis.

	All			Cash			Stock			Mixed		
	High	Low	H-L	High	Low	H-L	High	Low	H-L	High	Low	H-L
Panel A: Diversifying Acquisitions												
All Bidders	2.22% ^a	0.62% ^c	1.60% ^a	1.89% ^a	0.78% ^c	-1.11% ^c	2.71%	0.32%	2.38%	2.59% ^a	0.42%	2.17% ^b
	397	295	(0.002)	215	166	(0.077)	28	13	(0.421)	154	116	(0.012)
Public Targets	1.44%	-1.95%	3.39% ^b	2.18%	-0.78%	2.96%	1.68%	-5.57% ^b	7.25% ^a	0.76%	-2.29%	3.05%
	44	24	(0.037)	12	14	(0.126)	14	4	(0.007)	18	6	(0.552)
Private Targets	2.32% ^a	0.85% ^b	1.47% ^a	1.87% ^a	0.92% ^b	0.95%	3.74%	2.94%	0.80%	2.83% ^a	0.57%	2.26% ^b
	353	271	(0.006)	203	152	(0.151)	14	9	(0.852)	136	(110)	(0.012)
Panel B: Non-Diversifying Acquisitions												
All Bidders	1.19% ^a	0.18%	1.00% ^c	0.80% ^b	0.01%	0.81%	-0.29%	3.76% ^c	3.47%	2.08% ^b	1.00%	1.08%
	466	270	(0.087)	257	157	(0.182)	37	13	(0.202)	172	100	(0.359)
Public Targets	-3.07% ^b	-3.11% ^c	0.04%	-1.21%	-1.87%	0.66%	-5.32%	-6.20%	0.88%	-3.99% ^c	1.23%	-5.22%
	46	17	(0.986)	22	7	(0.777)	14	7	(0.860)	10	3	(0.421)
Private Targets	1.65% ^a	0.40%	1.25% ^b	0.99% ^b	0.08%	0.91%	2.77%	-0.90%	3.67% ^c	2.46% ^a	0.99%	1.47%
	420	253	(0.038)	235	150	(0.142)	23	6	(0.076)	162	97	(0.230)

Table 6. Short-run Cumulative Abnormal Return (CAR) of High-Valuation Vs Low-Valuation Acquirers by the Book-To-Market (B/M) Ratio

The table presents the Cumulative Abnormal Returns (CARs) for bidders that acquired public, private and/or subsidiary UK targets over the 1984 and 2003 period. Cumulative abnormal returns are calculated for the 5 days [-2, +2] around the announcement day (day 0) of a takeover. Abnormal Returns are estimated using a modified market-adjusted model: $AR_{it} = R_{it} - R_{mt}$, where R_{it} is the Return on firm i and R_{mt} is the Value Weighted Market Index Return. All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Panel A represents acquisitions with high book-to-market ratio and Panel B acquisitions with low book-to-market ratio, respectively. Bidder's book-to-market ratio is the net book value divided by its market value and is estimated one month before the acquisition announcement date. We rank acquirers' book-to-market values and then we classify the ones above (below) the sample book-to-market median as high (low) B/M acquirers. Results are partitioned by valuation period to acquisitions undertaken during high- and low-valuation periods respectively. Using monthly data from 1984 till 2003, each month is classified through this period as a high- (low-) valuation month if the detrended market P/E of that month belongs to the top (bottom) half of all detrended P/Es above (below) the past five-year average. All other months are classified as neutral-valuation acquisitions. The results are further divided by the method of payment. Cash acquisitions include transactions made solely in cash, or cash and debt. Stock acquisitions are defined as transactions made solely in common stock. Mixed payment acquisitions consist of all acquisitions in which the payment method is neither pure cash nor pure stock, and methods classified as "other" by SDC. The number of bids is reported below the mean. H-L (High minus Low) column represents the differences in mean short-run CARs for the five days [-2, +2] around the announcement day (day 0) of a takeover. ^a Denotes significance at the 1% level; ^b Denotes significance at the 5% level; ^c Denotes significance at the 10% level. P-values are provided in parenthesis.

	All			Cash			Stock			Mixed		
	High	Low	H-L	High	Low	H-L	High	Low	H-L	High	Low	H-L
Panel A: High Book-to-Market												
All Bidders	1.30% ^a	0.87% ^c	0.43%	1.06% ^a	0.87%	0.19%	0.68%	-2.37%	3.05%	1.93% ^b	1.30%	0.63%
	412	259	(0.463)	271	148	(0.759)	18	13	(0.443)	123	98	(0.607)
Public Targets	-0.15%	-2.80% ^c	2.65%	0.25%	-1.06%	1.31%	0.28%	-8.52%	8.81%	-1.06%	-0.89%	-0.18%
	45	21	(0.181)	16	11	(0.489)	15	5	(0.121)	14	5	(0.965)
Private Targets	1.48% ^a	1.19% ^b	0.29%	1.11% ^a	1.02% ^c	0.09%	2.66%	1.48%	1.18%	2.32% ^b	1.42%	0.90%
	367	238	(0.638)	255	137	(0.892)	3	8	(0.797)	109	93	(0.489)
Panel B: Low Book-to-Market												
All Bidders	2.37% ^a	0.15%	2.22% ^a	1.95% ^a	0.01%	1.94% ^a	1.65%	-1.25%	2.90%	2.85% ^a	0.48%	2.37% ^c
	376	242	(0.000)	157	134	(0.008)	34	9	(0.273)	185	99	(0.010)
Public Targets	-2.00%	-1.21%	-0.79%	-0.21%	-1.43%	1.22%	-6.25% ^c	-4.28% ^c	-1.98%	-0.91%	4.55%	-5.46%
	38	17	(0.699)	17	9	(0.658)	10	5	(0.611)	11	3	(0.408)
Private Targets	2.86% ^a	0.26%	2.60% ^a	2.22% ^a	0.11%	2.11% ^a	4.95% ^b	2.53%	2.42%	3.09% ^a	0.35%	2.74% ^a
	338	225	(0.000)	140	125	(0.005)	24	4	(0.422)	174	96	(0.004)

Table 7. Price Run Up Analysis of High-Valuation Vs Low-Valuation Acquirers over the 180-day Pre-Event Period

The table presents the average abnormal returns for bidders that acquired public, private and/or subsidiary UK targets over the 1984 and 2003 period. Average abnormal returns are calculated for the 180-day period preceding the announcement [-180, -3]. Abnormal Returns are estimated using a modified market-adjusted model: $AR_{it} = R_{it} - R_{mt}$, where R_{it} is the Return on firm i and R_{mt} is the Value Weighted Market Index Return. All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). In Panel A results are partitioned by valuation period to acquisitions undertaken during high- and low-valuation periods respectively. Using monthly data from 1984 till 2003, each month is classified through this period as a high- (low-) valuation month if the detrended market P/E of that month belongs to the top (bottom) half of all detrended P/Es above (below) the past five-year average. All other months are classified as neutral-valuation acquisitions. The results are further divided by the method of payment. Cash acquisitions include transactions made solely in cash, or cash and debt. Stock acquisitions are defined as transactions made solely in common stock. Mixed payment acquisitions consist of all acquisitions in which the payment method is neither pure cash nor pure stock, and methods classified as “other” by SDC. In Panel B the two groups are further subdivided into four categories: i) High-valuation acquirers who had the highest pre-announcement average abnormal returns, ii) High-valuation acquirers who had the lowest pre-announcement average abnormal returns, iii) Low-valuation acquirers who had the highest pre-announcement average abnormal returns, iv) Low-valuation acquirers who had the lowest pre-announcement average abnormal returns. The number of bids is reported below the mean. H-L (High minus Low) column represents the differences in mean short-run CARs for the five days [-2, +2] around the announcement day (day 0) of a takeover. ^a Denotes significance at the 1% level; ^b Denotes significance at the 5% level; ^c Denotes significance at the 10% level. P-values are provided in parenthesis.

Panel A	All				Cash				Stock				Mixed			
	All	High	Low	H-L	All	High	Low	H-L	All	High	Low	H-L	All	High	Low	H-L
All	0.03% ^a	0.04% ^a	0.01%	0.03% ^a	0.01% ^b	0.02% ^b	0.01%	0.01%	0.10% ^a	0.14% ^a	0.01%	0.13% ^b	0.03% ^a	0.05% ^a	0.01%	0.04% ^b
	1372	819	553	(0.002)	777	458	319	(0.348)	88	62	26	(0.014)	507	299	208	(0.028)
Public	0.03% ^c	0.06% ^b	-0.02%	0.08% ^b	0.01%	0.02%	-0.02%	0.04%	0.07%	0.12% ^b	-0.06%	0.18% ^b	0.04% ^c	0.04%	0.03%	0.01%
	129	89	40	(0.032)	54	34	20	(0.469)	38	27	11	(0.041)	37	28	9	(0.826)
Private	0.02% ^a	0.04% ^a	0.01%	0.03% ^b	0.01% ^b	0.02% ^b	0.01%	0.01%	0.13% ^a	0.16% ^a	0.06%	0.10%	0.03% ^a	0.05% ^a	0.01%	0.04% ^b
	1243	730	513	(0.012)	723	424	299	(0.435)	50	35	15	(0.143)	470	271	199	(0.032)

Table 7. (Continued)

Panel B	Top group (50%) in terms of pre-event returns	High-Valuation Acquirers			Low-Valuation Acquirers				Mean Difference (1)-(3)	Mean Difference (2)-(4)
		Average 5-day CAR (1)	Bottom group (50%) in terms of pre-event returns	Average 5-day CAR (2)	Top group (50%) in terms of pre-event returns	Average 5-day CAR (3)	Bottom group (50%) in terms of pre-event returns	Average 5-day CAR (4)		
All	0.19% ^a	2.11% ^a 407	-0.11% ^a	0.92% ^a 412	0.13% ^a	0.97% ^a 273	-0.12% ^a	-0.21% 280	1.14% ^b (0.040)	1.13% ^b (0.032)
Cash	0.16% ^a	1.45% ^a 210	-0.10% ^a	1.19% ^a 248	0.14% ^a	0.63% 147	-0.10% ^a	0.17% 172	0.82% (0.199)	1.02% (0.101)
Stock	0.26% ^a	2.66% 40	-0.08% ^a	-2.66% 22	0.17% ^a	-0.09% 13	-0.14% ^a	-3.34% 13	2.75% (0.348)	0.68% (0.809)
Mixed	0.21% ^a	2.86% ^a 157	-0.13% ^a	1.02% 142	0.13% ^a	1.54% ^b 113	-0.14% ^a	-0.49% 95	1.32% (0.185)	1.51% (0.138)
Public	0.20% ^a	-0.42% 44	-0.08% ^a	-1.19% 45	0.13% ^a	-0.96% 16	-0.11% ^a	-3.64% ^b 24	0.54% (0.802)	2.45% (0.180)
Private	0.19% ^a	2.42% ^a 363	-0.11% ^a	1.18% ^a 367	0.13% ^a	1.09% ^a 257	-0.12% ^a	0.11% 256	1.33% ^b (0.021)	1.07% ^c (0.051)

Table 8. Ordinary Least Squares (OLS) Regression Analyses of Cumulative Abnormal Returns on High and Low- Valuation Acquisitions

This table presents regression estimates of the acquirer's five-day cumulative abnormal return on acquisitions for high- and low-valuation deals, controlling for deal and acquirer characteristics. All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Using monthly data from 1984 till 2003, each month is classified through this period as a high- (low-) valuation month if the detrended market P/E of that month belongs to the top (bottom) half of all detrended P/Es above (below) the past five-year average. All other months are classified as neutral-valuation acquisitions. High-valuation deals, is an indicator variable that takes the value of one if the deal is conducted within a high-valuation classified month. We refer to this dummy as high-valuation deals dummy. Low-valuation deals, is an indicator variable, defined as a binary variable that takes the value of one if the deal is made within a low-valuation classified month. Cash deals, is an indicator variable taking the value of 1 for cash and debt acquisition deals and zero otherwise. Common stock deals, is an indicator variable taking the value of 1 for stock acquisition deals and zero otherwise. Diversification deals, is an indicator variable taking the value of 1 when the acquirer and target for acquisition are not in the same industry and zero otherwise. Book-to-market ratio is the net book value divided by its market value and is estimated one month before the acquisition announcement. Target's relative size, is defined as the log of the target deal value to acquirer's market value one month before the acquisition announcement date, and acquirer's size, is defined as the log of acquirer's market value one month before the acquisition announcement date. Acquirer's return r_{t-1} is defined as the average 6-month pre-event return. Market return r_{t-1} represents the average 6-month pre-event return of the market index. Merger activity $_{t-1}$ is defined as the log of one plus the number of mergers during the 6-month pre-announcement period. ^a Denotes significance at the 1% level; ^b Denotes significance at the 5% level; ^c Denotes significance at the 10% level. P-values are provided in parenthesis.

Dependent Variables	All		
	(1)	(2)	(3)
Intercept	0.016 (0.336)	0.061 ^a (0.000)	0.012 (0.475)
High-Valuation deals (Dummy = 1 If Target is Acquired in a high-valuation month)		0.011 ^a (0.000)	0.011 ^a (0.001)
Low-Valuation deals (Dummy = 1 If Target is Acquired in a low-valuation month)		-0.002 (0.539)	0.003 (0.484)
Cash deals (Dummy = 1 If Target is Acquired with Cash and Debt)	-0.001 (0.789)		-0.009 (0.753)
Common stock deals (Dummy = 1 If Target is Acquired with Common Stock)	-0.002 (0.847)		-0.002 (0.820)
Diversifying deals (Dummy = 1 If Target and Acquirer are in Different Industry)	0.005 ^c (0.080)		0.005 ^c (0.059)
B/M	0.000 (0.982)		-0.001 (0.785)
Log of Relative Size of Target to Acquirer	0.010 ^a (0.001)		0.010 ^a (0.001)
Log of Acquirer Size	-0.001 (0.563)		-0.002 (0.430)
Acquirer Return r_{t-1}	2.046 ^a (0.006)		1.965 ^a (0.008)
Market Return r_{t-1}	6.238 ^a (0.001)		4.499 ^b (0.027)
Merger Activity r_{t-1}	0.001 (0.714)		0.002 (0.627)
F-Statistic	4.675 (0.000)	8.726 (0.000)	4.817 (0.000)
N	2302	2973	2302
R²	1.80%	0.58%	2.26%

Table 9. Calendar-Time Portfolio Regressions (CTPRs) of Long-Run Stock Returns using the Fama-French 3-Factor Model

This table presents Fama and French (1993) 3-factor alphas for merger portfolios of all, high- and low-valuation acquirers. All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). The sample consists of successful acquisition deals completed over the 1984-2002 (2000) period for 1- (3-) year analysis as identified from the Thomson Financial *Securities Data Corporation's* (SDC) *Global Financing* database. Using monthly data from 1984 till 2003, each month is classified through this period as a high- (low-) valuation month if the detrended market P/E of that month belongs to the top (bottom) half of all detrended P/Es above (below) the past five-year average. All other months are classified as neutral-valuation acquisitions. Panel A reports alphas for 1 year post-event, Panel B for 3 years post-event. Calendar time regression alphas are also reported by method of payment used in the transaction (Cash, Stock, Mixed). Cash acquisitions include transactions made solely in cash, or cash and debt. Stock acquisitions are defined as transactions made solely in common stock. Mixed payment acquisitions consist of all acquisitions in which the payment method is neither pure cash nor pure stock, and methods classified as "other" by SDC. Acquirers enter the portfolio on the announcement day of the successful takeover and remain for 12 and 36 months, respectively. Portfolios are rebalanced each month to include firms that have just completed a takeover. We estimate the calendar-time return under the Fama-French 3-factor model with the following regression:

$$R_{pt} - R_{ft} = a_i + \beta_i(R_{mt} - R_{ft}) + s_iSMB_t + h_iHML_t + \varepsilon_{it}$$

The numbers in percentage represent the reported FF α , which is the average of the individual, firm-specific intercepts. Respectively, a, b and c denote statistical significance at the 1%, 5% and 10% levels based on heteroskedasticity adjusted standard errors. The number of firms is reported below the monthly average abnormal returns.

	All			Cash			Stock			Mixed		
	All	High	Low	All	High	Low	All	High	Low	All	High	Low
Panel A: 1 year												
All Bidders	0.03%	-0.16%	-0.10%	0.10%	0.11%	0.12%	-0.49%	-0.99%	-0.01%	0.28%	0.15%	0.55%
	1320	855	465	735	468	267	87	63	24	498	324	174
Public Targets	-0.06%	-0.84% ^c	0.88%	0.48%	0.59%	0.27%	-1.03%	-1.61% ^b	0.88%	-0.71%	-1.29% ^c	-0.19%
	123	86	37	53	33	20	35	26	9	35	27	8
Private Targets	0.09%	0.20%	-0.11%	0.08%	0.13%	0.08%	0.29%	1.35%	-0.86%	0.61% ^b	0.74%	0.62%
	1197	769	428	682	247	247	52	37	15	463	297	166
Panel B: 3 years												
All Bidders	-0.54% ^b	-0.37% ^b	-0.96% ^a	-0.27%	-0.12%	-0.83% ^b	-1.91% ^a	-1.32% ^b	-1.65% ^a	-0.59% ^a	-0.23%	-0.56% ^c
	1230	855	375	692	468	224	83	63	20	455	324	131
Public Targets	-0.33%	-0.01%	0.32%	0.55%	0.86% ^c	0.15%	-1.98% ^a	-0.96%	-0.51%	-0.26%	-0.55%	0.58%
	118	86	32	52	33	19	33	26	7	33	27	6
Private Targets	-0.50% ^b	-0.34% ^c	-1.04% ^a	-0.32%	-0.16%	-0.85% ^b	-1.47% ^a	-0.73%	-1.58% ^b	-0.40% ^c	-0.14%	-0.57% ^c
	1112	769	343	640	435	205	50	37	13	422	297	125

Table 10. Effect of Market-Wide Valuations: Calendar-Time Portfolio Regressions (CTPRs) By Acquirer Book-to-Market Ratio using the Fama-French 3-Factor Model

This table examines the impact of the market state by controlling for acquirer book-to-market ratio. All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). We equally divide the sample into high, medium and low book-to-market acquirers, and examine the 1- and 3-year performance of acquirers making acquisitions during high- and low-valuation periods for each book-to-market category. Using monthly data from 1984 till 2002, each month is classified through this period as a high- (low-) valuation month if the detrended market P/E of that month belongs to the top (bottom) half of all detrended P/Es above (below) the past five-year. All other months are classified as neutral-valuation acquisitions. Acquirers are divided into equal subsamples of high, medium and low book-to-market firms based on their book-to-market ratio one month prior to the acquisition announcement. Bidder's book-to-market ratio is the net book value divided by its market value and is estimated one month before the acquisition announcement date. Acquirers enter the portfolio on the announcement day of the successful takeover and remain for 12 and 36 months, respectively. Portfolios are rebalanced each month to include firms that have just completed a takeover. We estimate the calendar-time return under the Fama-French 3-factor model with the following regression:

$$R_{pt} - R_{ft} = a_i + \beta_i(R_{mt} - R_{ft}) + s_iSMB_t + h_iHML_t + \varepsilon_{it}$$

The numbers in percentage represent the reported FF α , which is the average of the individual, firm-specific intercepts. ^a Denotes significance at the 1% level; ^b Denotes significance at the 5% level; ^c Denotes significance at the 10% level. The number of firms is reported below the monthly average abnormal returns. The number of observations in differentials is reported in the parenthesis. H-L (High minus Low) column represents the differences in mean returns between high and low book-to-market firms.

	1 year		3 years	
	High	Low	High	Low
High B/M	0.19% 302	-0.37% 124	-0.05% 302	-0.81% ^c 85
Medium B/M	-0.18% 219	0.42% 165	0.02% 219	0.02% 135
Low B/M	-0.03% 267	1.29% ^c 117	-0.62% ^b 267	-0.97% ^a 101
H-L	0.48% (95)	-1.18% (108)	0.51% (167)	0.03% (120)

Table 11. Calendar-Time Portfolio Regressions (CTPRs) of Acquirers with the Best and Worst Pre-event Performance using the Fama-French 3-Factor Model

This table presents the pre-announcement (6-month) as well as the post-event 1- and 3-year monthly average calendar time abnormal returns of four categories of acquirers. All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Firstly, acquirers are divided into two groups, high and low-valuation acquirers respectively. High- (low-) valuation acquirers are the one who acquired firms during periods of high- (low-) stock market valuations. Using monthly data from 1984 till 2002, each month is classified through this period as a high- (low-) valuation month if the detrended market P/E of that month belongs to the top (bottom) half of all detrended P/Es above (below) the past five-year. All other months are classified as neutral-valuation acquisitions. The two groups created above are further subdivided into four categories: i) High-valuation acquirers who had the highest six-month pre-announcement monthly average abnormal returns, ii) High-valuation acquirers who had the lowest six-month pre-announcement monthly average abnormal returns, iii) Low-valuation acquirers who had the highest six-month pre-announcement monthly average abnormal returns, iv) Low-valuation acquirers who had the lowest six-month pre-announcement monthly average abnormal returns. Acquirers enter the portfolio on the announcement day of the successful takeover and remain for 12 and 36 months, respectively. Portfolios are rebalanced each month to include firms that have just completed a takeover. We estimate the calendar-time return under the Fama-French 3-factor model with the following regression:

$$R_{pt} - R_{ft} = a_i + \beta_i(R_{mt} - R_{ft}) + s_iSMB_t + h_iHML_t + \varepsilon_{it}$$

The numbers in percentage represent the reported FF α , which is the average of the individual, firm-specific intercepts. ^a Denotes significance at the 1% level; ^b Denotes significance at the 5% level; ^c Denotes significance at the 10% level. The number of firms is reported below the post-monthly average abnormal returns.

	High-Valuation Acquirers		Low-Valuation Acquirers	
	Top group (50%) in terms of pre- event returns	Bottom group (50%) in terms of pre-event returns	Top group (50%) in terms of pre- event returns	Bottom group (50%) in terms of pre-event returns
Average 6-month pre-event CTPR	4.86% ^a	-2.93% ^a	2.82% ^a	-3.36% ^a
Average 1-year CTPR	0.04%	0.05%	-0.70% ^b	-0.57%
	446	406	213	252
Average 6-month pre-event CTPR	4.95% ^a	-2.86% ^a	2.87% ^a	-2.35% ^a
Average 3-year CTPR	-0.54% ^b	-0.36% ^c	-0.39% ^c	-1.22% ^a
	437	398	177	198