Acquisitions, Overconfident Managers and Self-Attribution Bias

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ABSTRACT

We examine whether acquisitions by overconfident managers generate superior abnormal returns and whether managerial overconfidence stems from self-attribution. Self-attribution bias suggests that overconfidence plays a greater role in higher order acquisition deals predicting lower wealth effects for higher order acquisition deals. We find evidence in support of the view that average stock returns are related to managerial overconfidence. Overconfident bidders realize lower announcement returns than rational bidders and exhibit poor long-term performance. Second, we find that managerial overconfidence stems from self-attribution bias. Specifically, we find that high-order acquisitions (five or more deals within a three-year period) are associated with lower wealth effects than low-order acquisitions (first deals). That is, managers tend to credit the initial success to their own ability and therefore become overconfident and engage in more deals. In our analysis we control for endogeneity of the decision to engage in high-order acquisitions and find evidence that does not support the self-selection of excessive acquisitive firms. Our analysis is robust to the influence of merger waves, industry shocks, and macroeconomic conditions.

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The chance of gain is by every man more or less overvalued, and the chance of loss is by most men undervalued.

Adam Smith in *The Wealth of Nation*s (1776, Book I, Chapter X)

1. Introduction

The examination of causes and shareholder wealth effects of mergers and acquisitions is one of the most researched areas in finance. A stylised fact emerging from the empirical literature suggests that shareholders of target firms earn significant and positive abnormal returns surrounding acquisition announcements, a finding that is rather not surprising given the hefty premiums paid to the targets.[1] Acquiring firms, on the other hand, are found to realize negative to zero abnormal returns while the combined entity (target and acquirer) earns a positive abnormal return around the announcement date.[2] This evidence suggests, that mergers and acquisitions are disruptive activities that often do not create value, on average, for the shareholders of the acquiring firm (Andrade, Mitchell, and Stafford (2001)). Roll (1986), the first to introduce the optimism and overconfidence approach to corporate finance with his "hubris" theory of acquisitions, interprets the evidence on merger announcement effects, surveyed by Jensen and Ruback (1983), as consistent with the "hubris" hypothesis. The negative wealth effects to acquirers reported in several recent studies (Andrade, Mitchell, and Stafford (2001) and Moeller, Schlingemann and Stulz (2004), among others), are also in line with Roll's "hubris" hypothesis.[3]

While a large number of studies in this literature suggest that mergers and acquisitions portray the agency relationship between shareholders and managers developed by Jensen and Meckling (1976), in this paper we examine whether managerial overconfidence plays an important role in explaining the short- and long-term performance of mergers. Specifically, we address the question of whether overconfident managers act in the interests of their shareholders when they engage in mergers. Unlike the behavioral foundation of Jensen's (1986) agency costs of free cash

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[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 contains a more hostile character of a takeover. Note, however, that we use the terms 'mergers' and 'acquisitions' interchangeably in our analysis.

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

[3] Hayward and Hambrick (1997), Hietala, Kaplan and Robinson, (2003). Malmendier and Tate (2004) also relate acquisitiveness to corporate managers' hubris. Heaton (2002) develops a framework that links overconfidence and corporate investments.

flow where mergers are motivated by private benefits of control, the overconfidence hypothesis argues that managers are simply overconfident and overinvest. Overconfident managers feel that they have superior skills and are more competent than others. These cognitive biases motivate them to bet on their own judgment and engage in complicated tasks such as multiple acquisitions. Managers with overconfidence profiles tend to underestimate (overestimate) the risks (synergy gains) associated with mergers and are therefore less likely to postpone an acquisition decision. Overconfident managers are, in general, optimistic and predisposed to acquire targets quickly and frequently. Thus, we argue that overconfident managers are prone to engage in multiple acquisitions because they believe that such serial investment decisions are in the best interest of shareholders than "rational" managers do. As a result, managerial overconfidence, manifested in multiple mergers within a short period of time, is predicted to encourage acquisitions that generate lower announcement returns than "rational" bidders. Moreover, managerial overconfidence will be more pronounced in acquisitions where there is limited information about targets and managers are more likely to rely on their own "erroneous" beliefs and merger-picking skills. Private acquisitions are ideal for testing the managerial overconfidence hypothesis because managers' subjective evaluations of the potential merger gains (losses) are more likely to motivate these investment decisions. Additionally, since value ambiguity (uncertainty) is high in private deals due to sparse information, reasoning may be more difficult and managers may resort to intuitive decisions (Kahneman (2003)) that may be associated with stronger behavioral biases.[4]

Unlike previous studies, in this study we also address the fundamental question of whether overconfidence is driven by managers' self-attribution bias. Specifically, we address whether this behavioral bias engenders managerial overconfidence. Since managerial overconfidence is expected to be higher after initial gains and lower after losses, the self-attribution bias hypothesis suggests that overconfidence plays a greater role in higher order acquisition deals. Hence, the prediction is that higher order acquisition deals will be associated with lower wealth effects. To date, very little is known whether self-attribution has the potential to influence managers' investment decisions. In an independent study, Billet and Qian (2005) also examine whether self-attribution elicits managerial overconfidence. Our approach differs in two main respects. First we focus on private acquisitions

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[4] In a different context, Daniel, Hirshleifer, and Subrahmanyam (1998, 2001), Jiang, Lee, and Zhang (2004) argue that investor overconfidence is more likely to be stronger when there is greater ambiguity about the true value of a stock. Moreover, Baker and Wurgler (2005) argue that investor sentiment is likely to be stronger among stocks, which are more difficult to value.

while Billet and Qiam concentrate on public acquisitions. Second, we use a U.K. sample while their analysis is based on U.S. data. Our findings are consistent with their results and point out that managerial overconfidence and self-attribution is not a U.S. phenomenon. To shed light on whether managerial overconfidence stems from self-attribution bias we examine multiple acquirers' wealth effects in low-order (1st deals) and high-order (5th or more deals) acquisitions conducted within a three-year period. If self-attribution bias develops managerial overconfidence, high-order acquisitions will be associated with lower wealth effects than low-order acquisitions.

Finally, we examine the long-term performance of acquirers subsequent to the acquisition announcement. This is expected to detect whether (i) successful initial acquisitions encourage managers to engage in more acquisitions and (ii) the performance of acquirers is consistent with market's reaction surrounding acquisition announcements.

To examine whether overconfident managers serve the interests of their shareholders' wealth through acquisitions we use an overconfidence proxy based on managers' acquisitiveness (i.e., propensity to acquire companies) within a short span of time. The rationale behind our high acquisitiveness overconfidence measure stems from the belief that the undertaking of multiple acquisitions in a very short time interval is a poor investment strategy and an appropriate indicator of overconfidence.[5] Several studies (i.e., Baker and Wurgler (2002) and Jenter (2005)), suggest that managers' views of fundamental value tend to diverge systematically from market valuations. Hence, managers' merger decisions serve as a window into their beliefs on the firm's current valuation and its post-merger prospects. Our overconfidence measure is consistent with Malmendier and Tate (2004) who argue, "… that doing multiple acquisitions in a year is itself a bad idea and a likely indicator of overconfidence". Our approach builds on and extends their recent work demonstrating that optimistic CEOs complete more mergers, especially diversifying ones, which are perhaps the most ambiguous in value. Managers engaging in multiple acquisitions within a short period of time tend to overestimate their ability to select profitable investments, the synergy gains between their company and a target, while they are less likely to negotiate efficiently. High managerial acquisitiveness is a direct trait of overconfidence and consistent with Heaton's (2002) argument that overconfident managers undertake more projects. Hence, we classify managers as overconfident when they conduct five or more than five acquisitions within a 3-year period. Such an extreme acquisitive strategy should reflect reckless

managerial confidence. While managers are likely to be acquisitive during merger waves, industry shocks and macroeconomic conditions, overconfident managers that believe they possess acquisition skills should engage in multiple acquisitions regardless of these circumstances. In a different context, Fuller, Netter and Stegemoller (2002) use the same definition to identify firms as "frequent" acquirers.

The intuition behind our overconfidence measure is also consistent with investor overconfidence models predicting (i) high trading volume in the stock market in the presence of overconfident traders and (ii) overconfident investors, at the individual level, trade more aggressively resulting to lower profits.[6] In the corporate investment context, overconfident managers are expected to conduct multiple and, in general, more mergers than "rational" (non-overconfident) managers. The CEO optimism proxy, developed by Malmendier and Tate (2004), relies on the propensity of managers of the acquiring firm to hold in-the-money stock options. That is, the timing of option exercises is used to identify managerial overconfidence. While Malmendier and Tate (2004) provide evidence that overconfident CEOs undertake mergers that fail to create value because they overestimate their ability to generate returns, it cannot be ruled out that this result is sensitive to the overconfidence proxy and limited to the U.S. market. To determine whether this finding is not sensitive to the choice of the overconfidence proxy and robust outside the U.S., we investigate whether acquisitive U.K. corporate managers undertake mergers that result in superior abnormal returns relative to those created by "rational" managers. The country choice was dictated by the fact that U.K. has the most active merger activity after the U.S. and represents more than 65% of merger transactions in Europe. This is the first study to address the effects of high acquisitive (overconfident) managerial strategies on shareholder value. Using a large and entirely different data set spanning the period from 1980 to 2004 allows to overcome the criticism that observed empirical regularities arise from data mining.

To check the sensitivity of our results an alternative measure based on insider dealings could be used. Specifically, since overconfident managers believe that their decisions ultimately will create value, it is reasonable to expect that they would increase their ownership stake in the firm. However, acquisitive strategies driven by empire building (agency costs) motives should motivate managers to

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[5] Our overconfidence measure seems to fit the profile of CEOs such as Mr Ebbers of World.Com, among others, who acquired numerous companies in a very short interval of time.
[6] Odean (1998) calls this finding "the most robust effect of overconfidence" suggesting that changes in trading volume is the primary testable implication of overconfidence theory. He also finds that overconfident traders exhibit lower expected utility than rational traders and hold underdiversified portfolios.

reduce their ownership stakes. Therefore, insider-trading activity of top managers could be employed as an alternative measure of managerial overconfidence. Unfortunately, there is no comprehensive U.K. database with insider ownership that would match our sample. The Hemscott database contains insider dealings for a small fraction of our sample that does not permit us to reliably replicate our tests. In addition, the quality of information contained in this database is subject to severe reporting limitations due to a high rate of omissions. This is the main reason we were unable to perform robustness tests using insider ownership as alternative managerial overconfidence measure.

Unlike most previous studies that concentrate on acquisitions of publicly traded firms, we focus on acquisitions of private firms.[7] A distinct feature of the U.K. acquisition activity is that 91% of acquisitions are associated with private targets.[8] Furthermore, the virtue of this dataset is that private acquisitions serve as the most appropriate testing ground of the overconfidence hypothesis since they are more likely to reflect managers' beliefs about potential synergies and future cash flows than it would be the case for public target firms. Another interesting aspect of the U.K. data set is that more than 55% of acquisitions are cash financed, with only 5.3% stock financed.[9] Since the preference of internal financing is indicative of overconfident managers (Malmendier and Tate (2004)), who tend to perceive their firm to be undervalued, the U.K. acquisitions data provide a unique opportunity to test the overconfidence hypothesis. This unique feature of the U.K. sample in comparison to U.S. merger deals that are primarily stock financed naturally controls for acquisitions motivated by equity overvaluation, market timing and merger waves.

This study contributes to the literature in several ways. First, our results indicate that overconfidence is an integral component of corporate acquisitions. Second, the evidence shows that managerial overconfidence fails to create superior shareholder value than that generated by "rational" managers through acquisitions. A key contribution of our analysis is that managers who adopt excessive acquisitive strategies fail to create greater shareholder value than "rational" managers. Our findings also show that overconfident bidders exhibit poor long-term performance. The long-term performance of acquisitive bidders is even worse for their high-order deals than their first deals.

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[7] The small number of U.K. public acquisitions, that would prohibit us to draw any reliable conclusions, dictated the other reason we limited the analysis on private acquisitions.
[8] For instance, Moeller, Schlingemann and Stulz (2005) show that only 65% of U.S. acquisitions involve private targets. Faccio and Masulis (2005), however, show that 90% of U.K. (and Irish) acquisitions for the 1997-2000 period involve unlisted and subsidiary targets. This figure is in line with our sample.
[9] This pattern is consistent with Faccio and Masulis (2005) who report that 80.2% of U.K. bids during the 1997-2000 period is cash financed. This is in sharp contrast with the U.S. practice (see, for example, Andrade, Mitchell and Stafford (2001) who report that 70% of U.S. acquisitions are stock financed, with 58% fully stock financed).

Third, we document that overconfidence is a function of self-attribution. Specifically, we find that high-order acquisitions are associated with lower wealth effects than lower-order acquisitions. Namely, managers tend to credit the initial success to their own ability and therefore become overconfident and engage in more deals. Fourth, our findings suggest that managerial overconfidence has the potential to explain the financing decisions of firm. Fifth, we control for the endogeneity of the decision to engage in high-order acquisitions and find evidence that does not support the self-selection of high-order acquisitive firms. In general, our results are not sensitive to several acquisition characteristics, industry shocks, macroeconomic conditions, past merger activity and merger waves. Finally, our evidence implies that conventional contract incentives are unlikely to mitigate the harmful effects of managerial overconfidence.

The remainder of the paper is organized as follows. Section 2 reviews the link between high acquisitiveness and overconfidence and outlines our approach. 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. Overconfidence and Self-attribution Bias

2.1. Theoretical Foundations of Managerial Overconfidence

The idea that certain managers may be overconfident in their own abilities to manage, select superior investment projects and precision of their knowledge is motivated by psychological studies of judgment. The most important finding that emerges from these papers is the phenomenon of overconfidence (Tversky (1995)). The calibration paradigm of forecast inaccuracy is common in most professions and there is no *a priori* reason to believe that corporate managers are immune to this bias. Tversky (1995) argues that overconfidence is rooted in factors such as illusion of control, self-enhancement tendencies, insensitivity to predictive accuracy, and misconceptions of chance processes. All these causes of overconfidence, apply to the merger decisions of corporate managers.[10]

Specifically, overconfident managers tend to believe that future merger outcomes are under their control. This illusion of control is even more pronounced for merger outcomes that they are

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[10] Griffin and Brenner (2004) argue that all concepts characterizing overconfidence are linked. They allege that optimistic overconfidence perspective builds on the better than average effect, unrealistic optimism, and illusion of control.

highly committed (Weinstein (1980), Weinstein and Klein (2002)). A CEO who suffers from illusion of control is highly likely to be excessively optimistic about the future prospects of a merger (Langer (1975), Langer and Roth (1975), and March and Shapira (1987)). Therefore, a manager is also likely to underestimate the odds of downside potential. Kahneman and Riepe (1998, p. 54) summarize this source of overconfidence as follows: "The combination of overconfidence and optimism is a potent brew, which causes people to overestimate their knowledge, underestimate risks, and exaggerate their ability to control events". Since a merger results in replacing the managers of the target with the managers of the acquirer, the latter are likely to suffer from greater illusion of control over the prospects of the merger and to underestimate the probability of failure.

Frank (1935) and Weinstein (1980) provide evidence that individuals are especially overconfident about projects to which they are highly committed. An overconfident CEO who initiates successful mergers can be thought of being highly committed since his compensation correlates personal wealth to the company's stock price and, hence, to the outcomes of corporate investment decisions. Malmendier and Tate (2004, 2005) argue that the effects of control and commitment have the potential to influence managers' internal investment decisions as well. Specifically, a CEO with this kind of overconfidence about the prospects of his own firm may cause him to be reluctant to raise external capital to finance a takeover bid (Heaton, (2002)). This is more likely to be the case when the CEO believes that the market value of the firm is below its intrinsic value.

Individuals are likely to be overconfident about events that have a positive meaning and representation to them (Weinstein (1980), Weinstein and Klein (2002)). Hence, self-enhancement may fuel managerial overconfidence.

In the mergers and acquisitions framework overconfidence is displayed in two forms: First, a corporate manager may overestimate the synergy gains of the potential merger. This overvaluation stems from the manager's belief that his leadership skills are better than average or from the underestimation of the downside of the merger due to the illusion of control over its outcome (Malmendier and Tate, (2004)). That is, overconfident managers feel that they have the ability to identify hidden synergies and pick promising targets that others cannot. It is also possible that after a good deal, overconfidence leads managers to multiple acquisitions. High managerial acquisitiveness is analogous to the perceived superior stock-picking phenomenon, which tends to generate a pattern of performance reversal. Overconfident managers, like investors with perceived superior stock-picking

skills, are likely to engage in multiple acquisitions resulting in persistent inferior returns. Second, a manager may overestimate the value of his current company. That is, he may believe that the company's equity is undervalued. This overvaluation stems from the overestimation of future returns from "hand-picked" investment projects or general overestimation of the capitalized value of his future leadership.

The model of Malmendier and Tate (2004) predicts that overconfident CEOs are more likely to conduct value-destroying acquisitions if the perceived synergies and the company's equity undervaluation are considerably large and the portion of the deal financed by equity is sufficiently small. In addition, they argue that an overconfident CEO with abundant internal resources (i.e., large cash reserves and low leverage) is more likely to conduct an acquisition than a rational CEO and that the announcement performance in mean returns between rational and overconfident acquirers should be positive. We test the managerial overconfidence hypothesis by estimating mean announcement and long-term returns for "rational" and overconfident acquirers.

2.2. Self-attribution and Overconfidence

Self-attribution also tends to reinforce individual overconfidence (Wolosin, Sherman, and Till (1973), Langer and Roth (1975), Miller and Ross (1975), and Schneider, Hastorf, and Ellsworth (1979). This bias is analogous to the "better than average effect", suggesting that individuals believe they have above-average abilities, (Svenson, (1981), Taylor and Brown, (1988)) and "narrow confidence intervals" implying that people are miscalibrated in the way that their probability distributions or confidence intervals for uncertain events (i.e., outcome of a merger) are too tight (Lichtenstein, Fischhoff, and Phillps (1982)). Since self-attribution bolsters overconfidence, managers that suffer from this bias are more likely to be highly overconfident in their own judgment and overestimate (underestimate) the potential positive (negative) outcome of a merger. This kind of overconfidence has the propensity to induce mergers that are, on the margin, value-destroying. Managers with a successful history in mergers and acquisitions may think that they are more experienced than others and that might reinforce their overconfidence tendency. The "learning objection" (irrational agents will learn from experience to be rational) is weaker in corporate finance (than asset pricing literature), because important corporate financial decisions about capital structure and investment policy are more infrequent than trading decisions, with longer-delayed outcomes and noisier feedback. Learning from experience is less likely in such circumstances (Brehmer (1980)) and,

therefore, the potential for failure might be larger than expected.[11] To examine whether managerial overconfidence stems from self-attribution bias we analyze multiple acquirers' wealth effects in low-order (1st deals) and high-order (5th or more deals) acquisitions. Specifically, we estimate abnormal returns for multiple acquirers' first deals and five or more than five deals within a 3-year period. The self-attribution hypothesis predicts that higher order acquisitions will be associated with lower wealth effects than lower order acquisitions.

2.3. Managerial Measure of Overconfidence

Roll's (1986) hubris hypothesis suggests that managers engage in acquisitions with an excessive optimism about their ability to create value. Acquisition fieldwork and laboratory experiments show that managers cannot carefully evaluate acquisitions that occur in quick succession (Haunschild, Davis-Blake and Fichman (1994)). Managers often experience an adrenaline rush or over-exuberance to acquire (Jemisson and Sitkin (1986)) and hence, they ignore inferences from prior acquisitions, particularly if those inferences raise doubts about the merits of the focal acquisition. To study the effects of overconfidence we need a measure that accurately portrays this behavioral bias in corporate managers. We use managers' high acquisitiveness within a short span of time to identify overconfidence. Specifically, we classify managers as overconfident when they conduct five or more acquisitions within a 3-year period. Fuller, Netter and Stegemoller (2002), use the same definition to characterize high acquisitive firms as "frequent" acquirers. High managerial acquisitiveness is a direct measure of overconfidence and consistent with Heaton's (2002) argument that overconfident managers undertake more projects. Multiple acquisitions within a short time interval indicate that managers have been consistently overconfident about the prospects of the company.

Our approach is also consistent with the recent work of Malmendier and Tate (2004) who document that optimistic CEOs carry out more mergers. Managers engaging in multiple acquisitions within a short period of time tend to overestimate their ability to select profitable targets and the synergy gains associated with mergers, while they are predisposed to underestimate the potential value losses by relying more on their own analytic skills and instincts. Heightened acquisitiveness is a direct trait of overconfidence. Unlike empire builders who tend to misuse corporate resources by overinvesting, overconfident managers believe that they act in the interest of the shareholders when

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[11] Russo and Schoemaker (1992, 2001) argue that managers make the mistake to equate experience with learning. In addition, Hayward (2002) posits that learning relates to the quality rather than quantity of a firm's experience.

they engage in quick and multiple mergers. The rationale of our overconfidence measure is also in line with investor overconfidence models predicting high stock trading activity by overconfident traders (Odean (1998)).

The CEO optimism measure, a surrogate of overconfidence, developed by Malmendier and Tate (2005), relies on the propensity of managers of the acquiring firm to hold in-the-money stock options. The rationale behind this measure is that voluntarily holding in-the-money options, given that the CEO's human capital is already exposed to firm-specific risk, is construed as a strong signal of optimism. That is, they use the timing of option exercises to identify managerial overconfidence.[12] It can be argued that this overconfidence proxy, however, tends to capture managers' overconfidence about the firm's future performance rather than just overconfidence about the outcome of the merger. In addition, managers may hold (delay exercising) company options simply because they are in-the-money. Hence, this overconfidence proxy may not always signal overconfidence. While Malmendier and Tate (2004) find that overconfident CEOs display high acquisitiveness and undertake multiple mergers that destroy value because they overestimate their ability to generate returns, it cannot be ruled out that this result is sensitive to the overconfidence proxy and limited to the U.S. market. To determine whether this finding is not susceptible to the choice of the overconfidence proxy and robust outside the U.S., we investigate whether acquisitive U.K. corporate managers are able to create superior abnormal returns through mergers. Moreover, the limited use of stock options in the U.K. makes it impossible to use the timing of option exercises to identify managerial overconfidence.

Our high acquisitiveness proxy for overconfidence also draws on the idea that overconfidence enhances the chances to succeed in contests (Goel and Thakor (2002) and Krahmer (2003)). Hence, a merger can be viewed as a contest whose winner is the manager who increased his probabilities of winning by conducting multiple acquisitions.

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[12] Malmendier and Tate (2004) presented a second proxy. In particular, they compared they way CEOs were characterized in major newspapers and business publications, categorizing them as either overconfident or cautious. However, any judgment made by a newspaper or journal has a high probability of subjective judgment leading to unreliable conclusions. Press, named as journalists and analysts, is often biased due to personal intolerance, interests or passions and therefore inferences made should always be considered with a great caution.

3. Data and Methodology

3.1. Data

We examine a sample of 5334 successful acquisitions by U.K. public companies that acquired both domestic and foreign targets from January 1, 1980 to December 31, 2004. 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:

1. Acquirers are U.K. firms publicly traded on the London Stock Exchange (LSE) and have five days of return data around the takeover announcement on the Datastream database.

2. Targets are private firms (including subsidiary firms). The reason that the sample consists of private targets is twofold. First, we focus on private acquisitions because the bulk of merger activity in the U.K. consists of private acquisitions. Specifically, as Panel A of Table 1 shows, public transactions represent a very small fraction (9%) of the mergers and acquisitions activity in the U.K., while private acquisitions stand for the vast majority (91%) of the takeover activity in the U.K. Moreover, public targets represent fewer industries in comparison to private targets, which represent 57 different industries, as Table 2 shows. Hence, the sample of private transactions covers a broad range of industries and is more representative of reality. Second, we concentrate on private targets because they are more difficult to value than public targets (i.e., there is relatively less public information to evaluate private firms) and therefore they provide a unique sample to test managers' overconfidence. Specifically, the valuation of private targets serves as the most appropriate testing ground of the overconfidence hypothesis since they are more likely to reflect managers' beliefs about potential synergies and future cash flows than public target firms. Public firms have a broader investor base and therefore are more closely followed by security analysts than private firms. Finally, it is sensible to argue that private acquisitions have the potential to develop managerial acquisition skills and/or reinforce overconfidence.

3. The acquirer purchases at least 50% of the target's shares as a result of the takeover.

4. The deal value is one million dollars or more.[13]

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[13] We employ a one million dollars cut-off point to avoid results being generated by very small deals. The one million dollars cut-off point has also been used in other studies (see, for example, Fuller, Netter, and Stegemoller (2002), and Moeller, Schlingemann, and Stulz (2004)).

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. The frequent acquirer is a publicly listed firm that completes five or more acquisitions on different announcement days within three years of the first acquisition during the sample period. The three-year period is also motivated by the need to control for the effects of manager turnover. Management turnover is expected to be very low within the three-year interval. Hence, our analysis rules out the possibility that the results are likely to be driven by management turnover.[14] Firms that do not meet the multiple acquirers' criterion are classified as single acquirers. Furthermore, since the market has no information about the acquirer at the first bid it reacts to the merger announcement, as it is just a 'normal' bid of a single acquirer. Hence, we also include first deals of frequent acquirers into the group of single acquirers.

7. Financial and utility acquirer and target firms are excluded from the sample. These firms have been excluded from the sample because they are regulated and therefore managers' investment biases are less likely to be as pronounced as in non-regulated firms.

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. This screening procedure produced a final sample consisting of 3844 and 1490 acquisitions undertaken by single and multiple acquirers, respectively. The two portfolios of single and multiple acquirers are 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.

Panel A of Table 1 presents the activity of acquisitions among private and public targets, value of acquirer and the value of deals stratified by the acquisitiveness of the acquirer, deal value

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[14] As a robustness check, one could replicate the analysis with bidders that made five or more acquisitions within a three-year period under one chief executive officer. Unfortunately, we could not conduct this test because this information is not available.

and method of payment. An interesting result that emerges from the sample statistics is that a large fraction of U.K. acquirers (about 28%) engage in multiple acquisitions and the vast majority (91%) is associated with private deals. Another noticeable observation is that about 56% of the private acquisitions are settled in cash and only 3.5% in stock. High acquisitive firms make even greater use of cash (57%) indicating that equity overvaluation is unlikely to motivate U.K. mergers. The greater use of cash by multiple acquirers corroborates the view that overconfident managers have a preference for internal over external financing because they tend to perceive their firms to be undervalued.[15] This observation also suggests that managerial overconfidence has the potential to explain the financing decisions of the firm. Panel B reports firm-specific data for multiple and non-multiple acquirers. Multiple acquirers have a mean market value that is approximately the same with that of non-multiple acquirers, but a median value that is 2 times larger than that of non-multiple acquirers. Hence, heightened acquisitiveness is a feature that characterizes larger firms. We also find that multiple acquirers have a median capital expenditures value two times larger than that of non-multiple acquirers. They have four times more debt capacity and considerably larger cash flows than non-multiple acquirers. Finally, market's perceived investment opportunities, proxied by Tobin's q ratio, are also larger for overconfident acquirers.

[Insert Table 1 About Here]

Table 2 provides the financing and industry characteristics of the sample. While one would expect multiple acquirers to make greater use of cash, Panel A shows that there are no distinct differences between multiple and non-multiple acquirers. Panels B, indicates merger activity by industry. The sample is widely spread across 57 industries.

[Insert Table 2 About Here]

3.2. Methodology

The short-term analysis is based on abnormal returns around the announcement date. We calculate cumulative abnormal returns (CARs) for the five-day period [-2, +2] around the announcement date supplied by SDC.[16] More specifically, we estimate the abnormal returns by using a modified market-adjusted model:

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[15] Moreover, consistent with Hansen (1987), the cash choice of payment reveals that acquirers feel they have more knowledge about the target's value.

[16] We choose the five-day period because Fuller et al. (2002) find that a five-day window around the merger announcement is wide enough to capture the first mention of a merger every time for a sample of about 500 announcements.

$$AR_{it} = R_{it} - R_{mt} \tag{1}$$

where R_{it} is the return on firm i and R_{mt} is the value-weighed market index return.[17] The FT-All Share

Market Index is used to estimate the market return. This approach amounts to assuming that α = 0

and β = 1 for the firms in our sample.[18]

The long-term analysis is conducted by estimating abnormal returns 1, 2 and 3 years after the

announcement date. Because a subsequent acquisition will occur within less than 36 months after a

preceding acquisition, due to multiple acquirers in our sample, we use calendar time portfolio

regressions to sidestep the problem of cross-sectional dependence of sample observations.[19] In each

calendar month, a portfolio is formed by including all stocks with an acquisition event during the past

12, 24, or 36 months. The portfolio is rebalanced every month by including new event firms executed

a transaction in the previous month and dropping the ones whose latest acquisition event falls out of

the one- to three-year holding period. 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. The Fama-French three-factor model is estimated

using the three factors of Dimson, Nagel, and Quigley (2003) to account for the U.K. size and book-to-

market peculiarities :[20] We estimate the following model:

$$R_{pt} - R_{ft} = a_i + \beta_i (R_{mt} - R_{ft}) + s_i SMB_t + h_i HML_t + \varepsilon_{it} \tag{2}$$

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

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[17] See also Fuller et al. (2002) and Dong, Hirshleifer, Richardson and Teoh (2005), among others, for a similar estimation procedure of market-adjusted returns.
[18] Since our sample consists of multiple acquirers conducting many acquisitions within a short time interval, we do not estimate market parameters, based on a time period before each acquisition, because there is a high likelihood that previous acquisitions would be included in the estimation period, hence making beta estimations less meaningful. Furthermore, Brown and Warner (1980) have shown that for short window event studies, weighting the market return by the firm's beta does not significantly improve estimation. Malmendier and Tate (2004) have also used the estimation procedure of Fuller et al. (2002).
[19] 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.
[20] Dimson, Nagel, and Quigley (2003) use different breakpoints to those of Fama-French (1993) to construct size and book-to-market portfolios mainly due to size and B/M ratio being negatively correlated in the U.K. and large firms (small firms) being concentrated in the low (high) B/M quartile. The Dimson et al.'s (2003) three factors are available until 2001. For 2002 and 2003 we constructed these factors using the same procedure.

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. Announcement Returns and Overconfidence

Table 3 presents five-day CARs by type of acquirer and method of payment. Panel A shows abnormal returns for public and private deals. Consistent with previous evidence, public acquisitions are associated with negative and significant abnormal returns (-0.90%).[21] Market's negative reaction is more pronounced in stock (-2.23%) acquisitions. For all private deals, the abnormal return is 1.18% and statistically significant at the 1% level. This result is in line with the evidence of Chang (1998), Ang and Kohers (2001), and Fuller, Netter and Stegemoller (2002) who document substantial gains in acquisitions of privately held firms. The greater acquirer return in private than public targets seems to reflect a liquidity discount for the assets of private targets. Acquisitions associated with cash, stock and the mixed method of payment have abnormal returns of 0.82%, 3.47%, and 1.49%, respectively, and statistically significant at the 1% level. The higher abnormal returns from private acquisitions that involve stock financing 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.

The overconfidence bias suggests that heightened acquisitiveness, a direct measure of managerial overconfidence, should be associated with lower wealth effects than low (single acquirers) acquisitiveness. The results suggest that the market reaction to acquisition deals made by multiple and single acquirers is considerably different. For high acquisitive (multiple acquirers) firms, as shown in Panel B, we find that the mean acquirer abnormal return over the five-day window surrounding the acquisition announcement date is 0.79%, significantly different from zero. For low acquisitive firms the mean acquirer abnormal return over the same window interval is 1.34%, significantly different from

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[21] 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 surrounding acquisition announcements.

zero. The mean difference in abnormal returns between single and multiple acquirers is 0.55% and statistically significant at the 1% level. This suggests that multiple acquirers fail to outperform single acquirers. This evidence supports the theoretical prediction of Malmendier and Tate (2004) who posit that overconfident managers overestimate their ability to generate superior returns.

Several studies claim that stock transactions are associated with acquirers most likely to be overvalued while cash transactions are associated with acquirers unlikely to be overvalued.[22] Behavioral biases, such as overconfidence, are likely to influence the method of financing. If acquirers become overconfident from successful acquisitions (i.e., overvalued equity) they should exhibit optimism in trading the stock of their companies in successive acquisitions. If this is the case, stock should be the preferred financing choice. Consistent with Myers and Majluf (1984) a bid made with stock reveals the acquirer views its stock as overvalued. Overconfident managers, however, who engage in many and quick acquisitions often disagree with their firm's market valuation. Hence, when an acquirer's stock is perceived as undervalued, overconfident managers are more likely to consider cash deals. Panel B shows that managers, in general, have a preference for cash financing suggesting that acquisitions are not motivated by acquirers' overvalued equity. Consistent with the overconfidence hypothesis, the evidence demonstrates that acquisitive managers make lower use of stock (36) than cash (854) and mixed (600) deals, pointing out that they engage in multiple acquisitions even when they think that their companies' equity is undervalued. This pattern of deal financing differences clearly suggests that multiple deals are not driven by stock overvaluation. Interestingly, the results also show that multiple acquirers realize lower positive abnormal returns than single acquirers regardless of the method of payment used. The mean return difference between multiple and single acquirers is statistically significant only in cash deals.

[Insert Table 3 About Here]

4.2. Announcement Returns and Self-attribution Bias

Psychology and behavioral finance literature argue that self-attribution is an important source of overconfidence.[23] Individuals subject to self-attribution bias tend to attribute good outcomes to their ability and bad outcomes to external factors.[24] To examine whether managerial overconfidence is

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[22] See, for example, Asquith, Brunner, and Mullins (1983).

[23] See Kahneman and Tversky (2000), Gilovich, Griffin and Kahnemann (2002) and Baker, Ruback, and Wurgler (2004).

[24] Hirshleifer (2001) describes the relation between overconfidence and self-attribution: "Overconfidence and biased self-attribution are static and dynamic counterparts: self-attribution causes individuals to learn to be overconfident rather than converging to an accurate self-assessment".

driven by self-attribution bias requires analyzing the sequence of acquisitions made by multiple acquirers. Therefore, we examine wealth effects of multiple acquirers for their first (low-order) deal and subsequent (high-order) deals. The self-attribution hypothesis predicts that high-order (5th or more deals) acquisitions will be associated with lower wealth effects than low-order (1st deals) acquisitions.

Table 4 reports abnormal returns for the first and the fifth or higher order of acquisitions carried out by multiple acquirers. For first deals we find the mean acquirer abnormal return over the five-day window interval surrounding the announcement date is 1.72% and significantly different from zero at the 1% level. Interestingly, this abnormal return is higher than that of single acquirers (1.34%) and multiple acquirers (0.79%) reported in Table 3, suggesting that self-attribution bias causes managers to be overconfident. The self-attribution bias hypothesis gains additional support from the data when we focus on the abnormal returns associated with first deals (1.72%) and fifth or higher deals (0.49%). The mean abnormal return difference between first deals and fifth or higher order deals is 1.23% and statistically significant at the 1% level.[25] The lower abnormal return to multiple acquirers found in higher order deals, suggests that the success of first deals fosters overconfidence. Another interesting observation that emerges from these results is that successive acquisitions systematically result in lower abnormal returns. This inverse relationship between acquisition deals and abnormal returns holds, in general, across different methods of payment. The abnormal returns for acquisitions with deal order of 2nd, 3rd, and 4th or more deals suggest that the prior success leads to more acquisitions resulting systematically in lower abnormal returns. More specifically, acquisitions with a deal order of 2, 3, and 4 or more deals have abnormal returns of 0.79%, 0.69%, and 0.63%, respectively. Moreover, these abnormal returns are statistically significant and different from zero at the one percent level.

When we look at the abnormal announcement returns for cash and mixed deals, the two predominant methods of payment, the pattern remains similar. First deals have higher abnormal returns than higher order deals. The average acquirer abnormal return difference between first deals and higher order deals is more pronounced in deals with combinations of cash and stock. This abnormal return difference is 2.49% and significant at the 1% level. These results suggest that the

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[25] To the extent that past acquisitions may be used by the market to anticipate future transactions the difference in wealth effects between first and high-order deals it is probably understated by the announcement returns.

difference between first and higher order deals within the group of acquisitive acquirers is not driven by difference in the method of payment. Furthermore, the evidence suggests that overvaluation of the acquirer does not seem to influence the results. Overall, the lower abnormal returns of higher order deals following successful previous deals are consistent with the view that overconfidence arises from self-attribution bias.

There are several plausible explanations for the lower performance of acquirers conducting multiple acquisitions in a short period of time. First, the market appears to anticipate that multiple acquirers are unable to realize synergy gains by efficiently integrating subsequent acquisitions, due to the short interval among them. Second, the market seems to anticipate the potential disruptive effects of mergers and hence each subsequent acquisition is expected to further deteriorate the firm's future performance. Third, multiple mergers within a short interval of time may signal to the market that the managers of the acquiring firm are overly optimistic about the future prospects of successive mergers and, therefore, paying too much to buy the assets of targets. To examine whether the market's reaction to multiple acquisition announcements is correctly anticipating overconfident acquirers' future prospects we need to investigate the long-term performance of high acquisitive firms. If the market underestimates the synergy gains and overestimates the value destructive effects of multiple mergers the long-term performance of multiple acquirers should improve. If on the other hand, managerial overconfidence, fueled by self-attribution bias, is driving mergers the future performance of high acquisitive firms should deteriorate. If we find that the long-term performance of high acquisitive firms worsens in the post-acquisition years it would suggest that (i) overconfident managers lack the ability to generate superior abnormal returns and (ii) the market's initial reaction to multiple deal announcements contained elements of unwarranted optimism about the future prospects of high acquisitive firms. We address the long-term effects of multiple acquirers in Section 4.

[Insert Table 4 About Here]

4.3. Acquirer Abnormal Returns and Diversifying Acquisitions

We have shown that overconfident managers conduct less value-increasing acquisitions than "rational" managers do and that the success of first deals reinforces their overconfidence resulting in more acquisitions with even lower abnormal returns. A common finding among several previous

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studies is that diversifying acquisitions destroy shareholder value.[26] Since overconfident managers are less likely to undertake value-increasing acquisitions, a possible explanation for this documented result in the literature could be the propensity of overconfident managers to conduct diversifying acquisitions. For our analysis, we expect overconfident managers to undertake more diversifying acquisitions. The announcement return for multiple acquirers is expected to be lower than that of single acquirers. Moreover, if self-attribution is reinforcing overconfidence, the announcement returns for multiple acquirers' first deals should be higher than those for their higher order deals.

Table 5 reports the results. First, consistent with our expectation, we find that overconfident acquirers engage in diversifying acquisitions. More than 64% of the acquisitions of high acquisitive firms are classified as diversifying based on 3-digit SIC code.[27] Second, as shown in Panel A, overconfident acquirers realize a positive, but considerably lower abnormal return than single acquirers. In general, the pattern of these results is consistent with those reported in Tables 3 and IV. The difference between the reaction for single and multiple acquirers is 0.64% and statistically significant at the 1% level. This finding is in agreement with the prediction that overconfident managers purse investments that fail to generate superior abnormal returns in comparison to the returns of "rational" managers. In addition, this evidence suggests that the lower abnormal returns of diversifying acquisitions are associated with managerial overconfidence. Hence, overconfidence appears to play an important role behind the industrial diversification discount documented in the literature. The return difference between 1st deals and 5th or more deals is 1.6% and statistically significant at the 1% level. That is, higher order deals exhibit significantly lower abnormal returns than first deals. Therefore, self-attribution seems to play an important role in reinforcing overconfidence.

Similar results, but with less dramatic differences between single and multiple acquirers, are recorded in Panel B for acquisitions in the acquirer's industry. This evidence suggests that even when multiple acquirers engage in non-diversifying acquisitions they systematically generate lower, on

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[26] See, for example, Morck, Shleifer and Vishny (1990), Lang and Stulz (1994), Berger and Ofek (1995), Servaes (1996). Doukas and Kan (2004) show that diversifying acquirers experience greater excess cash flow declines and valuation discounts than non-diversifying acquirers. One may argue that acquisitions of private targets are likely to have a small impact on the industrial diversity of the acquirer. However, conducting multiple acquisitions in a short interval of time has the potential to alter acquirers' diversity.

[27] 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.

average, announcement returns than single acquirers. Finally, we find that higher order deals are associated with lower, on average, abnormal returns than first deals.

[Insert Table 5 About Here]

4.4. Acquirer Abnormal Returns and Acquisition Characteristics

The evidence presented so far is consistent with self-attribution bias leading to overconfidence in that first deals by multiple acquirers are value increasing while high-order deals by multiple acquirers exhibit lower wealth effects. Moreover, our findings support the self-attribution bias hypothesis predicting that successful deals are followed by more deals. That is, managers tend to credit the initial success (i.e., positive abnormal announcement returns) to their own ability and therefore become overconfident and engage in more deals.

We now look more closely into the relationship between single and multiple acquirers and the low and high order of deal activity of the latter controlling for several acquisition characteristics. Specifically, we examine the role of target's relative size,[28] the origin of the target, acquirer's Q ratio,[29] average debt capacity[30] and average capital expenditures.[31] The motivation behind these robustness checks is to determine whether the high acquisitiveness of multiple acquiring firms is influenced by these factors. If high acquisitiveness is not driven by these forces we should continue to observe the same return pattern differences between single and multiple acquirers and the low and high order of deal activity of multiple acquirers.

Table 6 reports the results. Single acquirers, as shown in Panel A, consistently outperform multiple acquirers suggesting that these acquisition characteristics do not drive the return difference between overconfident and "rational" acquirers. This result here suggests that the overconfidence effect is different from the effects of acquisition characteristics. We then focus on the deal activity of

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[28] Target's relative size is defined as the deal value divided by acquirer's market value. The acquirer's market value is measured as monthly share price multiplied by the number of ordinary outstanding shares one month before the announcement date. The source is Datastream. We rank acquirers' relative size and then we classify the ones above (below) the sample relative size median as large (small) relative size.

[29] The acquirer Q ratio is calculated one month before the acquisition announcement date and is the product of the market value divided by the net book value. Low-Q acquirers are defined as those with Q<1, while high-Q acquirers are defined as those with Q>1.

[30] The debt capacity (in million pounds), is calculated by adding acquirer's straight debt, short-term debt, and preferred equity and subtracting cash and marketable securities as of the date of the most recent financial information prior to the announcement of the transaction. We rank the data, available from SDC, according to the average debt capacity and form high debt and low debt portfolios if average debt capacity lies above or below the sample's median, respectively.

[31] The capital expenditure (in million pounds) represents purchases of property, plant and equipment for the 12 months ending on the date of the most current financial information prior to the announcement of the transaction. Data of capital expenditure are obtained from SDC. We divide them by industry using the 3-digit SIC code. We then split the sample into diversifying and non-diversifying acquisitions by comparing the 3-digit SIC code of the acquirer and the target.

multiple acquirers. Panel B illustrates that the first deals are associated with higher abnormal returns than the fifth or more deals of overconfident acquirers across the various acquisition characteristics. Hence, the effect of overconfidence within the group of multiple acquirers is also different from the effects of acquisition characteristics. This pattern of return differences is consistent with our previously reported findings indicating that our results are not sensitive to the various acquisition characteristics. Finally, this finding indicates that self-attribution bias plays an important role in forming managerial overconfidence.

[Insert Table 6 About Here]

4.5. Acquirer Abnormal Returns and Corporate Governance

We have found that overconfident managers make mergers that fail to contribute to the mean cumulative abnormal return during the event window around the announcement of a subsequently successful takeover bid more than that of "rational" managers. The empirical results suggest that the market understands that multiple mergers create less value because managerial exuberance about potential merger synergies dominates the decision to engage in multiple merger activity. The next question that emerges from the empirical analysis so far is whether multiple acquiring firms, run by overconfident managers, have weaker corporate governance than single acquiring firms. The issue we address here is whether effective corporate governance mitigates managerial acquisitiveness. To put it differently, does the board of directors serve as a check of this behavior?

Following Malmendier and Tate (2004) who suggest that firms with four to twelve directors have strong corporate governance characteristics we classify acquirers meeting this criterion as strong corporate governance firms. The rest of companies in our sample are classified as firms with weak corporate governance characteristics. Our corporate governance data set limits the analysis to the 1990-2000 period. Table 7 reports the results. Panel A shows the abnormal returns for acquiring firms with weak corporate governance while Panel B reports abnormal returns for acquiring firms with strong corporate governance. The following key observations emerge from these results. First, regardless of whether acquiring firms are run by "rational" or overconfident managers, acquirers with weak corporate governance are associated with lower abnormal returns than similar firms with strong corporate governance. Second, invariably, single acquirers outperform multiple acquirers. This result suggests that overconfidence has a distinct wealth effect. Third, the deal activity of multiple acquirers, shown in Panels A and B, illustrates that overconfident acquirers' first deals are associated with

higher abnormal returns than their fifth or more deals. For acquirers with weak (strong) corporate governance the mean return difference between first deals and fifth or more deals is 1.93% (1.88%) and statistically significant at conventional levels. While this is more pronounced in firms with weak corporate governance, the difference between weak and strong corporate governance firms is indistinguishable. This result suggests that corporate governance does not seem to strongly mitigate managerial overconfidence.

We now turn to the monitoring role of blockholders. It is generally believed that monitoring becomes more effective when non-management investors hold large stakes in a corporation. Therefore, blockholders with enough control to influence and incentives to monitor managers are expected to restrain the cognitive bias of overconfidence and lead to better acquisition decisions.[32] The Hemscott database provides quarterly information on blockholders' ownership from the September 2001 to December 2004. For this period, we were able to identify 522 single and 169 multiple acquirers with ownership information. We first rank these acquirers based on blockholder ownership and, then, we classify the ones above (below) the sample median as high (low) blockholder ownership acquirers. Panels C and D report the results. Before we focus on the abnormal return differences between single and multiple acquirers it is interesting to note that acquisitive firms are characterized by lower blockholder ownership than single acquirers. Specifically, 102 out of the 169 of multiple acquirers, more than 60%, have low blockholder ownership while only 47% of the sample of single acquirers is associated with low blockholder ownership. This seems to suggest that acquisitive managers are more likely to emerge in firms with low blockholder ownership. These two Panels also report abnormal returns for acquiring firms with high (Panel C) and low (Panel D) blockholder ownership. For firms with low blockholder ownership, single acquirers realize higher abnormal returns than multiple acquirers. The mean return difference is 1.85% and statistically significant at conventional levels. This result suggests that overconfident managers are unable to generate superior abnormal returns relative to those created by "rational" managers through acquisitions even when controlling for shareholders having high ownership stakes. For firms with low blockholder ownership, we observe a similar pattern, but with lower abnormal returns for both types of acquirers. The mean return difference is 0.95% and statistically insignificant at conventional levels. A noteworthy result that

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[32] As with managers, large non-management blockholders might use their power to extract corporate resources, which would reduce firm value.

comes out of the announcement returns of acquisitive firms is that the mean difference between high (1.93%) and low (0.88%) blockholders is 1.05% and statistically insignificant (p-value=0.297). Collectively, while the evidence appears to be consistent with the view that blockholders play an important role in monitoring acquisitive managers, their presence does not lead to superior shareholder wealth creation.

[Insert Table 7 About Here]

4.6. Cross-section Regression Analysis: Merger Activity and Waves

The results from the univariate tests indicate that overconfident bidders realize considerably lower announcement returns than single acquirers and poor long-term performance. The empirical results also show that high-order acquisitions are associated with lower wealth effects than lower-order acquisitions. That is, managers tend to credit the initial success to their own ability and therefore become overconfident and engage in more deals. This evidence supports the view that self-attribution bias leads to managerial overconfidence. To better examine the impact of managerial overconfidence and self-attribution biases on acquirers' performance around acquisition announcements, we adopt a multiple regression framework, where we employ low-order and high-order 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 single and multiple acquirers and between low-order and higher-order deals of multiple acquirers. We include a dummy variable that takes the value of one if the deal is the first one conducted by a multiple bidder within a three-year period. We refer to this binary variable as low-order deals dummy. We also include a high-order deals dummy, defined as a binary variable that takes the value of one if the deal is preceded by five or more deals in the previous three years. Since mergers tend to take place in concentrated time periods (waves) and macroeconomic conditions (see Mitchell and Mulherin (1996), Gugler, Mueler and Yurtoglu (2004), Rhodes-Kropf and Viswanathan (2004) and Harford (2005)), 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 market return t-1, measured as the average 6-month pre-event return of the FTSE All Share. In this regression analysis we also control for two merger waves

that emerged in the U.K. in 1988-1989, a few years after the privatisation and deregulation, and during the 1997-2000 period. In the U.K. the privatisation of the Telecommunications industry started out in 1981. This led to the sale of government shares in Cable and Wireless and the break up of postal and telecommunication services. This was followed by the privatisation of British Telecom in 1984.[33] However, corporate control changes in many privatised companies were prohibited for a period of up to 5 years following deregulation by the use of the golden shares by the U.K. government. Therefore, the impact of privatisation and deregulation on mergers was not really felt until 1987. In fact, as shown in Panel A of Table 2, the total number of acquisitions increased from 174 in 1987 to 375 in 1988. In 1989, 319 acquisitions occurred. Multiple acquisitions increased from 29 in 1987 to 109 in 1988 while in 1989 102 multiple acquisitions took place. Acquisitions after 1989 declined considerably. Because our sample excludes mergers in deregulated industries (e.g., sample selection criterion 7) such as Electricity, Oil and Gas, Steel, Telecommunications, Transport and Water, the surge in merger activity observed in 1988 and 1989 in our sample is less likely to be the result of privatisation and deregulation policies adopted earlier in U.K. The acquisition activity in U.K. experienced a second wave from 1997 to the burst of bubble in 2000. To account for these effects we use two binary variables: (i) Merger wave I dummy that takes the value of one to signify the increased merger activity in 1988 and 1989 and (ii) Merger wave II dummy that takes the value of one to indicate the boom in merger activity in 1997, 1998, 1999, and 2000.

The results are reported in Panel A of Table 8. The first regression specification relates single acquirers' abnormal returns to several acquirer and deal characteristics. The coefficients of regression (1) show that the relative deal size and market return $_{t-1}$ exert a positive and significant influence on single acquirers' announcement returns. In contrast, merger activity $_{t-1}$ has a negative impact on single acquirer's abnormal returns.

Self-attribution bias predicts that multiple acquirers' high-order deals will be associated with lower announcement returns than their first deals. Consistent with the results from the univariate tests, regression (2) shows that multiple acquirers' first deals have a positive but insignificant association with abnormal announcement returns. However, the dummy variable indicating higher-order deals (5th

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[33] This industry was further deregulated in 1991 when the duopoly of British Telecom and Mercury was terminated. These changes dramatically altered the Telecommunications industry, resulting in numerous restructuring activities. Similar developments took place in other industries such as the Electricity, Water and Transport.

or More Deals) carries a coefficient of -0.006 and is statistically significant at the four percent level, suggesting that the market discounts overconfident bids by approximately 0.60% over the five-day window. In regression (4), which includes the control variables, the coefficient of the high-order deals variable is -0.010 and is statistically significant at the eight percent level. This suggests that after controlling for deal and acquirer characteristics multiple acquirers' higher-order deals are associated with an abnormal return that is 0.10% less than that of first deals. When the regression analysis is carried out using the entire sample, single and multiple acquirers, the results remain remarkably similar. Consistent with regression (2), regression (5) points out that multiple acquirers' first deals have a positive but insignificant association with abnormal announcement returns. Furthermore, in regression (5) the higher-order deals indicator variable has a coefficient of -0.008 and is statistically significant at the one percent level. In regression (7), which includes the control variables, the coefficient of the high-order deal variable is -0.008 and statistically significant at the nine percent level. This evidence provides additional support for the theoretical prediction of Malmendier and Tate (2004, 2005) that overconfident managers fail to create superior abnormal returns than those generated by "rational" managers. In addition, these new findings substantiate our previous evidence suggesting that self-attribution leads to overconfidence.

In the third regression specification (regressions (3) and (6)), we use the same dependent variable but employ acquisition characteristic controls as independent variables. Specifically, the following independent variables are considered: (1) cash deals, which is an indicator variable taking the value of one for cash and debt acquisition deals and zero otherwise, (2) common stock deals, which is an indicator variable taking the value of one for stock acquisition deals and zero otherwise, (3) 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, (4) domestic deals, which is a binary variable that takes the value of one when the target is a domestic firm and zero otherwise, (5) cash flow, measured as the earnings before interest, taxes, depreciation and amortization for the last 12 months ending on the date of the most recent financial information available prior to the announcement of the transaction, (6) high debt capacity, defined as a binary variable with a value of one when the acquirer's debt exceeds the median sample debt capacity and zero otherwise (see also footnote 31), (7) capital expenditure, CAPEX, which represents purchases of property, plant and equipment for the 12 months ending on the date of the most recent financial information available

prior to the announcement of the transaction, (8) Tobin's Q ratio, calculated as the acquirer's market value divided by its net book value one month prior to the acquisition announcement, (9) target's relative size, defined as the log of the deal value to acquirer's market value one month before the acquisition announcement date, (10) acquirer's size, defined as the log of acquirer's market value one month before the acquisition announcement date, (11) acquirer's return $_{t-1}$, defined as the average 6-month pre-event return, (12) market return $_{t-1}$, measured as the average 6-month pre-event return of the FTSE All Share, (13) merger activity $_{t-1}$, defined as the log of one plus the number of mergers during the 6-month pre-announcement period, (14) merger wave I dummy, is an indicator variable with value of one to signify increased merger activity in 1988 and 1989, and (15) merger wave II dummy, is an indicator variable with value of one to signify the increased merger activity in 1997, 1998, 1999 and 2000. These results indicate that deal characteristics have no distinct bearing on abnormal returns five days surrounding the acquisition announcement.[34]

4.7. Probability of High-order Acquisitions and Correction for Sample-Selection Bias

The results thus far demonstrate that high-order acquisitions are associated with lower wealth effects than lower-order acquisitions. However, an important issue is whether forces other than managerial overconfidence drive high-order acquisitions. The concern here is whether high-order acquisitions variable, a surrogate for managerial overconfidence, is an endogenous variable and, therefore, driven by the same factors that is supposed to explain. Consequently, this has the potential to bias our previous OLS estimates.

To address this issue we use Heckman's (1979) two-step estimation procedure to control for potential endogeneity bias when we examine the effect of high-order deals on the acquirer's abnormal return. We denote the variable of interest by F_{it}, where F_{it} stands for the acquirer's abnormal return, CAR. We model F_{it} as:

$$F_{it} = \alpha_0 + \alpha_1 X_{it} + \alpha_2 (\textbf{\textit{High-order deals}})_{it} + \varepsilon_{it} \tag{1}$$

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[34] In an alternative regression specification, we introduce one more dummy variable to the ones used in Panel A, Table 8. This dummy takes the value of one for acquisitions made by a multiple acquirer. Therefore, the intercept in this regression corresponds to the average return for acquisitions made by single acquirers. If single acquisitions create operating synergies that enhance firm value, it is expected that the coefficient of the intercept to be positive, since it corresponds to single acquirers' acquisitions. The effects of the three dummies are then measured by the sum of the intercept and the coefficients of the corresponding dummy variable. The regression results, not shown here but available upon request, are consistent with our reported findings showing: (i) that single acquirers realize greater abnormal returns than multiple acquirers and (ii) multiple acquirers' high-order deals are associated with lower abnormal returns than their low-order deals.

where, X_{it} is a set of exogenous observable characteristics of the firm, (**High-order deals**) is a dummy variable that takes the value of one if the deal is preceded by five or more deals in the previous three years and the value of zero otherwise, $\alpha = \{\alpha_0, \alpha_1, \alpha_2\}$ is a vector of parameters to be estimated, and ε_{it} is an error term. Our hypothesis is that high-order acquisitions by multiple acquirers are not a random sample of acquisitions. That is, the null hypothesis is no sample bias. If the decision of overconfident managers to undertake an excessive number of acquisitions within a short-time interval is correlated with F_{it} (i.e., with the acquirers' abnormal announcement return), the (**High-order deals**)$_{it}$ variable will be correlated with the error term in equation (1) and the OLS estimate, α_2, will be biased. Specifically, we assume that managers' decision to engage in multiple acquisitions is determined by

$$(\textbf{\textit{High-order deals}})^*_{it} = \beta\, Z_{it} + \mu_{it} \qquad\qquad (2)$$

$(\textbf{\textit{High-order deals}})_{it} = 1$ if $(\textbf{\textit{High-order deals}})^*_{it} \geq 5$

$(\textbf{\textit{High-order deals}})_{it} = 0$ if $(\textbf{\textit{High-order deals}})^*_{it} < 5$

where $(\textbf{\textit{High-order deals}})^*_{it}$ is an unobservable latent variable, Z_{it} is a set of firm, industry, market and other characteristics that are likely to affect managers' multiple acquisition decision, and μ_{it} is an error term. The correlation between $(\textbf{\textit{High-order deals}})_{it}$ and ε_{it} in equation (1) will emerge when some of the exogenous variables in the $(\textbf{\textit{High-order deals}})$ equation affect F_{it} but are not used as regressors in equation (1), or when the error terms ε_{it} and μ_{it} are correlated. In either case, the estimation of α_2 using OLS will be biased.

Following Heckman's (1979) two-step procedure, we first estimate equation (2) using a probit regression to get consistent estimates of β, which are, then, used to obtain estimates of λ, the correction for sample-selection bias (a.k.a inverse of Mill's ratio). In the second step we obtain α_λ by estimating

$$F_{it} = \alpha_0 + \alpha_1 X_{it} + \alpha_2 (\textbf{\textit{High-order deals}})_{it} + \alpha_\lambda \lambda + \eta_{it} \qquad\qquad (3)$$

where a significant α_λ indicates that there is sample-selection bias. Moreover, the sign of α_λ indicates whether the OLS model over- or underestimates the impact of $(\textbf{\textit{High-order deals}})_{it}$ on F_{it}. The probit model (2), estimated in the first stage, uses the $(\textbf{\textit{High-order deals}})$ dummy as the left-hand side variable. Variables identifying the method of payment, industry and international diversification characteristics have been excluded from the probit regression. In the second stage model (3) is estimated using *CAR*s as the dependent variable regressed against the same set of variables used in

regressions (2, 3 and 4), listed in Panel A of Table 8, with the inclusion of the inverse of Mill's ratio, λ, and the use of the *(High-order deals)* variable.

These regression results are reported in Panel B of Table 8. Consistent with our previous findings, reported in Panel A of Table 8, the high-order deals variable has invariably a negative and significant association with acquirers' abnormal returns. In regressions (1) and (2) the coefficients of the high-order deals indicator are -0.012 and -0.010, respectively, and statistically significant at the four and eight percent level, respectively. The coefficient of Heckman's Lamda is 0.005 and insignificant for the abnormal return of multiple acquirers, implying that sample selection was not empirically relevant. Specifically, characteristics that make overconfident acquirers to pursue high-order acquisitions other than overconfidence and self-selection bias are not significantly correlated with acquirers' abnormal returns. For the entire sample, however, sample selection is prevalent as Heckman's Lamda enters the regression with a significant coefficient. Nevertheless, the high-order deals variable remains negative and statistically significant in these regressions. Specifically, in regressions (4) and (6) the coefficients of the high-order deals indicator are -0.009 and -0.008, respectively, and statistically significant at the five and eight percent level, respectively. In sum, our basic conclusion that high-order acquisitions are associated with lower wealth effects than lower-order acquisitions remains unchanged.

[Insert Table 8 About Here]

4.8. Overconfidence and Trading Activity

In the finance literature, overconfidence is usually defined as overestimating the precision of information about the value of an investment (Kyle and Wang (1997), Odean (1998), Daniel, Hirshleifer and Subrahmaniam (1998, 2001), Gervais and Odean (2001)). This miscalibration aspect of overconfidence leads to intensified differences of opinion among investors, which in turn causes trading (Varian (1989), Harris and Raviv (1993)). If investors construe heightened acquisition activity, as an act of managerial overconfidence that raises uncertainty about the future outcomes of the merger, trading activity should increase around the announcement date due to amplified differences of opinion. To examine whether heightened acquisitiveness is consistent with the prediction of the miscalibration feature of overconfidence, we examine acquirers' trading activity around the acquisition announcement. Specifically, we compare the trading activity of multiple bidders during the announcement period (-2, +2), ((*TURN*) (-2, +2)), and the (-180,-3), ((*TURN*) (-180,-3)), period for

their low-order (1st) and high-order (5th or more) deals. For the low-order deals the (*(TURN)* (-2, +2)) relative to the (*TURN*) ((-180,-3)) is 16.250 while for the high-order deals the (*(TURN)* (-2, +2)) relative to the (*TURN*) (-180,-3) is 133.134. The trading difference between high- and low-order deals, (*(TURN)* (-2, +2)) / (*(TURN)* (-180,-3)), is 116.884 and statistically significant at conventional levels. This result is consistent with the view that increased uncertainty, in response to increased managerial acquisitiveness, exacerbates differences of opinion among investors resulting in increased trading activity. Moreover, this evidence suggests that the lower wealth effects of high-order acquisitions documented so far are partly attributed to investors' increased disagreement about the future prospects of high-order deals.

5. Post-acquisition Long-term Performance

We have reported that overconfident managers engage in multiple acquisitions in a short-time interval fail to generate superior abnormal returns relative to non-acquisitive managers. We have also shown that self-attribution bias reinforces overconfidence leading to higher order of acquisitions that generate lower abnormal returns than first deals. We have attributed this result to market's anticipation that multiple mergers are less likely to result in operational efficiency and synergy gains. To assess whether the difference in stock price performance between multiple and single acquisitions is consistent with the expectation of the market, we examine the post-acquisition stock price performance of acquirers. We also examine the long-term performance difference between first deals and higher order (5th or more) deals of multiple acquirers.

If overconfident managers generate higher returns by engaging in multiple acquisitions than managers that engage in single acquisitions, time-series portfolios of overconfident managers 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 acquisitive managers earn higher returns for bearing additional risks. We use the intercept from the time-series regressions of the single and multiple acquirers to measure whether the latter earn higher returns for

bearing additional risk controlling for market, size, and book-to-market effects.[35] Intercepts are estimated for 1, 2 and 3 years subsequent to the acquisition announcement. Moreover, we examine the extent to which self-attribution boosts the managerial overconfidence of multiple acquirers by repeating this estimation procedure for their first deals and higher order (5th or more) deals.

Table 9 reports the regression results. An interesting result that emerges from the long-term performance analysis and in sharp contrast with the announcement returns is that all intercepts for both single and multiple acquirers are negative and statistically significant at conventional levels. The 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 in cash, stock and mixed financing deals. The market's non-negative reaction to acquisition announcements in comparison to the harmful post-acquisition stock performance indicates that the market overestimates the operational efficiencies and synergy gains for both single and multiple acquisitions. What is perhaps more interesting is that the market tends to underweight important information embedded in successive acquisitions.[36] 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.

The second interesting result from the multiple-acquirers portfolio regressions is that the stock performance of overconfident acquirers, those engaging in multiple acquisitions, is steadily lower than that of acquirers conducting single acquisitions. The intercepts are -0.87%, -1.28%, and -1.42%, statistically significant at the 1% level, for the first, second and third year, respectively, after the acquisition. These results are consistent with the view that overconfident managers do not have the ability to create abnormal returns. The steady post-acquisition stock performance declines reinforce the argument that very acquisitive managers tend to overestimate the synergies and operational efficiencies between their company and potential targets or underestimate the potential value destructive effects of multiple mergers.

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[35] 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.

[36] In a recent article, Financial Times (08/12/2004) wrote that "Most of the businesses were bought with financing packages on punchy multiples, where debt was six or seven times as great as the earnings before interest, tax, depreciation and amortization ... 'If everyone is using leverage to bid up prices that does not make investment sense. It encourages private equity firms to outbid each other and I can't see it not ending in tears for some'".

Third, the return difference between first deals and higher order deals within the multiple acquirers group provides additional support for the prediction of self-attribution bias which postulates that success following first deals lead to multiple future deals resulting in greater shareholder value losses. For fist deals the long-term abnormal returns are 0.38%, 0.12% and -0.26%, not statistically significant at conventional levels, for the first, second and third post-event years, respectively. For the higher-order deals sample the abnormal returns are -1.14%, -1.49% and -1.72%, all statistically significant at the 1% level, for the first, second and third post-event years, respectively. This pattern suggests that the initial acquisition success tends to reinforce managerial overconfidence. Moreover, these findings advocate that the post-acquisition negative stock performance of multiple acquirers, observed earlier, is driven by higher-order acquisition deals.

[Insert Table 9 About Here]

6. Conclusion

This paper examines whether overconfident managers act in the interests of their shareholders' wealth through mergers. Moreover, unlike previous studies, we also address the fundamental question of whether managers' self-attribution bias induces overconfidence. We shed light on these issues using a unique U.K. data set that spans the 1980-2004 period. A distinct feature of the U.K. data is that 91% of acquisitions are associated with private targets. Therefore, an advantage of this dataset is that private acquisitions provide a unique opportunity to test the overconfidence hypothesis since there is limited public information about private targets and the decision to acquire is more likely to be based on managers' beliefs about potential synergies and future cash flows. That is, private deals control the influence of public information on managers' decision-making process. Another advantage of using a foreign data set permits to examine whether the effects of managerial overconfidence are robust outside the U.S. and to overcome the criticism that observed empirical regularities arise from data mining.

This study provides additional support for the theoretical prediction of Malmendier and Tate (2004, 2005) that overconfident managers fail to generate superior abnormal returns relative to those created by "rational" managers and evidence that self-attribution induces managerial overconfidence. Our results show that overconfident bidders create positive announcement returns, but they are considerably lower than the returns realized by single bidders. In addition, we find that overconfident bidders exhibit poor long-term performance. Finally, we find that high-order acquisitions are

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associated with significantly lower wealth effects than lower order acquisitions. This suggests that managers tend to credit the initial success to their own ability and therefore become overconfident and engage in more deals. This result indicates that self-attribution bias motivates managerial overconfidence. In our analysis we control for endogeneity of the decision to engage in high-order acquisitions and find evidence that fails to support the self-selection of excessively acquisitive firms. Our results are not sensitive to various acquisition characteristics.

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Table 1. Summary Statistics of Acquisitions

This table presents summary statistics of 5848 completed acquisitions made by U.K. publicly traded firms during the 1980 to 2004 period. Panel A, 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 public and private domestic and foreign firms. Acquirers of private firms are split into single and multiple acquirers. Multiple acquirers are defined as acquirers acquiring five or more targets within a 3-year period. Firms that do not meet the multiple acquirers' criterion are classified as single acquirers. This group includes the first bid of multiple acquirers. 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. Panel B, reports the mean and median (in million pounds) of the firm-specific data. Assets include current assets, long-term investments and funds, net fixed assets, tangible assets, and deferred charges for the acquiring company. Capital includes property, plant and equipment. Investment represents capital expenditures for property, plant and equipment. Debt capacity includes acquirer's straight debt, short-term debt, and preferred equity subtracting cash and marketable securities. Cash flow represents earnings before interest, taxes and depreciation. Q is the product of the Market Value divided by the net book value.

Panel A: Acquisition Data

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	5848	486.998	89.76	57.848	6.815	338,236.09	100	100
Private	5334	415.134	83.72	31.628	5.855	168,671.74	49.87	91.21
Public	514	1232.762	232.66	329.892	44.735	169,564.35	50.13	8.79
All Private Deals	5334	415.134	83.72	31.628	5.855	168,671.74	49.87	91.21
Single	3844	413.619	65.70	31.333	5.500	120,443.34	71.41	72.07
Multiple	1490	419.042	143.85	32.390	6.965	48,228.40	28.59	27.93
Cash	2984	448.965	101.97	33.383	5.905	99,580.61	59.04	55.94
Stock	189	161.995	34.22	28.261	4.770	5,341.35	3.17	3.54
Mixed	2161	390.558	67.98	29.500	5.950	63,749.78	37.79	40.52
Single Cash	2130	433.035	88.19	32.073	5.495	68,315.99	56.72	55.41
Single Stock	153	166.009	29.90	30.056	4.000	4,598.52	3.82	3.98
Single Mixed	1561	411.395	50.41	30.448	5.600	47,528.83	39.46	40.61
Multiple Cash	854	488.696	154.63	36.653	7.010	31,264.62	64.83	57.31
Multiple Stock	36	144.937	51.69	20.634	6.300	742.83	1.54	2.42
Multiple Mixed	600	336.347	134.99	27.035	6.965	16,220.95	33.63	40.27

Panel B: Firm Data

Variables	Single Acquirers			Multiple Acquirers		
	Number of Mergers	Mean	Median	Number of Mergers	Mean	Median
Assets	1928	599.033	70.99	806	590.516	158.87
Capital	1640	232.637	18.84	652	283.649	33.26
Investment (CAPEX)	1572	37.017	3.82	628	41.031	7.69
Debt Capacity	1585	78.590	2.95	637	137.356	12.54
Cash Flow	1645	66.050	9.72	652	63.433	14.96
Q	3407	3.789	1.95	1384	6.747	2.13

Table 2. Financing Characteristics and Merger Activity by Industry for Private Acquisitions

This table reports in Panel A financing characteristics by year of completed UK private acquisitions made by UK publicly traded single and multiple acquiring firms. Acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Multiple acquirers are defined as acquirers acquiring five or more targets within a 3-year period. Firms that do not meet the multiple acquirers' criterion are classified as single acquirers. This group includes the first bid of multiple acquirers. 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, reports the mean and median (in million pounds) of the firm-specific data. Panel B displays the fraction of acquiring and private target firms by industry over the 1980 and 2004 period. Industry data are organized using the acquirer and target MID description provided by the SDC database. Columns 4 through 15 report the number and percentage of acquirers (single and multiple) and targets, respectively, in a particular industry.

Panel A: Financing Characteristics

Year	Number of Acquirers with Disclosed Method of Payment		Single Acquirers (SA)						Multiple Acquirers (MA)					
			Cash		Stock		Mixed		Cash		Stock		Mixed	
	SA	MA	N	%	N	%	N	%	N	%	N	%	N	%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1980	1	-	1	100	-	-	-	-	-	-	-	-	-	-
1981	3	-	-	-	-	-	3	100	-	-	-	-	-	-
1982	4	-	-	-	-	-	4	100	-	-	-	-	-	-
1983	4	-	-	-	-	-	4	100	-	-	-	-	-	-
1984	10	-	5	50	2	20	3	30	-	-	-	-	-	-
1985	19	-	14	74	5	26	-	-	-	-	-	-	-	-
1986	53	6	44	83	3	6	6	11	4	67	2	33	-	-
1987	145	29	109	75	17	12	19	13	22	76	2	7	5	17
1988	266	109	187	70	7	3	72	27	69	63	2	2	38	35
1989	217	102	129	59	8	4	80	37	66	65	5	5	31	30
1990	161	80	104	65	8	5	49	30	54	68	1	1	25	31
1991	103	61	72	70	3	3	28	27	36	59	3	5	22	36
1992	138	44	80	58	7	5	51	37	26	59	3	7	15	34
1993	145	48	72	50	8	6	65	44	26	54	1	2	21	44
1994	221	39	120	54	9	4	92	42	29	74	-	-	10	26
1995	202	49	100	49	6	3	96	48	27	55	3	6	19	39
1996	218	76	112	51	4	2	102	47	44	58	2	3	30	39
1997	283	140	149	53	7	2	127	45	73	52	3	2	64	46
1998	332	150	194	58	5	2	133	40	100	67	1	1	49	32
1999	287	143	150	52	8	3	129	45	81	57	-	-	62	43
2000	282	157	120	43	17	6	145	51	73	47	2	1	82	52
2001	222	92	83	37	7	3	132	60	38	41	2	2	52	57
2002	173	67	99	57	9	5	65	38	35	52	2	3	30	45
2003	152	56	87	57	5	3	60	40	33	59	1	2	22	39
2004	203	42	99	49	8	4	96	47	18	43	1	2	23	55
Total	**3844**	**1490**	**2130**	**55**	**153**	**4**	**1561**	**41**	**854**	**57**	**36**	**3**	**600**	**40**

Table 2- *Continued*

Panel B: Merger Activity by Industry

Industry	Single Acquirers N	%	Targets N	%	Multiple Acquirers N	%	Targets N	%
Aerospace and Defence	46	1.19	36	0.94	16	1.07	13	0.87
Advertising and Management	66	1.71	46	1.20	99	6.64	55	3.70
Agriculture and Livestock	22	0.56	25	0.65	0	0	5	0.34
Apparel and Retailing	24	0.61	31	0.81	5	0.34	2	0.13
Automobiles and Components	114	2.96	102	2.65	42	2.82	43	2.89
Automotive Retailing	61	1.58	77	2.00	34	2.28	40	2.68
Broadcasting	37	0.95	31	0.81	11	0.74	6	0.40
Building/Construction & Engineering	278	7.23	255	6.63	58	3.89	79	5.30
Cable	5	0.12	2	0.05	-	-	1	0.07
Casinos and Gaming	10	0.25	3	0.08	8	0.54	3	0.20
Chemicals	111	2.88	115	2.99	89	5.97	59	3.96
Computers and Electronics Retailing	10	0.25	13	0.33			1	0.07
Computers and Peripherals	55	1.42	66	1.72	6	0.40	12	0.81
Construction Materials	125	3.24	88	2.29	20	1.34	26	1.74
Containers and Packaging	63	1.63	61	1.59	48	3.22	31	2.08
Discount and Department Store Retailing	21	0.54	12	0.31	-	-	1	0.07
E-commerce/B2B	-	-	2	0.05	-	-	4	0.27
Educational Services	13	0.33	17	0.44	8	0.54	10	0.67
Electronics	78	2.02	94	2.45	29	1.95	40	2.68
Employment Services	34	0.87	41	1.07	27	1.81	27	1.81
Food and Beverage	205	5.32	154	4.01	70	4.70	65	4.36
Food and Beverage Retailing	114	2.96	145	3.77	39	2.62	42	2.82
Home Improvement Retailing	11	0.28	24	0.62	15	1.01	16	1.07
Home Furnishing	49	1.26	63	1.64	14	0.94	10	0.67
Hotels and Lodging	51	1.32	65	1.69	27	1.81	44	2.95
Household and Personal Products	21	0.54	24	0.62	19	1.28	10	0.67
Industrials	146	3.79	151	3.93	46	3.09	48	3.22
Internet and Catalogue Retailing	10	0.25	8	0.21	-	-	-	-
Internet Software and Services	34	0.87	32	0.83	8	0.54	9	0.60
IT Consulting and Services	115	2.98	100	2.60	57	3.83	38	2.55
Legal Services	-	-	1	0.03	-	-	-	-
Machinery	189	4.91	176	4.58	47	3.14	68	4.56
Metals and Mining	131	3.40	141	3.67	76	5.10	29	1.95
Motion Pictures/Audio Visual	42	1.08	43	1.12	8	0.54	10	0.67
Non Residential	21	0.54	152	3.95	16	1.07	94	6.31
Other Consumer Products	126	3.27	151	3.93	43	2.89	66	4.43
Other Materials	23	0.59	43	1.12	13	0.87	27	1.81
Other Media and Entertainment	-	-	6	0.16	-	-	-	-
Other Real Estate	183	4.75	66	1.72	105	7.05	6	0.40
Other Retailing	35	0.90	42	1.09	9	0.60	16	1.07
Other Telecommunications	1	0.03	5	0.13	-	-	1	0.07
Paper and Forest Products	30	0.77	48	1.25	7	0.47	8	0.54
Professional Services	218	5.66	239	6.22	87	5.84	126	8.46
Publishing	166	4.31	171	4.45	75	5.03	65	4.36
Real Estate Management and Development	30	0.77	21	0.55	-	-	3	0.20
Recreation and Leisure	52	1.34	59	1.53	41	2.75	46	3.09
REITs	33	0.85	14	0.36	29	1.95	5	0.34
Residential	2	0.51	4	0.10	-	-	1	0.07
Semiconductor	15	0.38	21	0.54	6	0.40	12	0.81
Software	182	4.72	210	5.46	42	2.82	68	4.56
Space and Satellites	3	0.08	1	0.03	7	0.47	-	-
Telecommunications Equipment	70	1.81	55	1.43	15	1.01	25	1.68
Textiles and Apparel	186	4.83	144	3.75	7	0.47	22	1.48
Tobacco	9	0.23	7	0.18	-	-	-	-
Transportation and Infrastructure	126	3.27	109	2.84	30	2.01	34	2.28
Travel Services	28	0.73	19	0.49	32	2.15	17	1.14
Wireless	14	0.36	13	0.34	-	-	1	0.07

Table 3. Cumulative Abnormal Returns of Single and Multiple Acquirers

This table presents the Cumulative Abnormal Returns (CARs) of acquirers acquiring public and private targets (Panel A) and single and multiple acquirers acquiring private targets (Panel B) over the 1980 and 2004 period. Cumulative abnormal returns are calculated for the five 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 (FT-All Share). All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Multiple acquirers are defined as acquirers acquiring five or more targets within a 3-year period. Firms that do not meet the multiple acquirers' criterion are classified as single acquirers. This group includes the first bid of multiple acquirers. CARs, in both panels, are reported 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 deals is reported below the mean. The last row represents the differences in mean CARs for the five days [-2, +2] around the announcement day (day 0) of a takeover. P-values are provided in parentheses. [a] Denotes significance at the 1% level; [b] Denotes significance at the 5% level; [c] Denotes significance at the 10% level.

	All	Cash	Stock	Mixed
Panel A: All Deals				
All Acquirers	1.00% [a]	0.75% [a]	1.25% [c]	1.32% [a]
	5848	3229	310	2309
Public Targets	-0.90% [a]	-0.05%	-2.23% [a]	-1.20% [c]
	514 (8.79%)	245 (7.59%)	121 (39.03%)	148 (6.41%)
Private Targets	1.18% [a]	0.82% [a]	3.47% [a]	1.49% [a]
	5334 (91.21%)	2984 (92.41%)	189 (60.97%)	2161 (93.59%)
Panel B: All Private Deals				
All Acquirers	1.18% [a]	0.82% [a]	3.47% [a]	1.49% [a]
	5334	2984	189	2161
Single Acquirers	1.34% [a]	0.95% [a]	3.83% [a]	1.62% [a]
	3844	2130	153	1561
Multiple Acquirers	0.79% [a]	0.49% [a]	1.92%	1.15% [a]
	1490	854	36	600
Mean Diff. in CARs [-2, +2] Single minus Multiple Acquirers	0.55% (0.005)	0.46% (0.033)	1.91% (0.277)	0.46% (0.175)

Table 4. Cumulative Abnormal Returns of Multiple Acquirers: 1st Deals and Later Deals

This table presents the Cumulative Abnormal Returns (CARs) by deal order of multiple acquirers acquiring private firms over the 1985 and 2004 period. Deal order is based on the number of acquisitions multiple acquirers announced within a 3-year period: 1st deals, 2nd, 3rd, 4th and 5th or more deals, respectively. Cumulative abnormal returns are calculated for the five 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 (FT-All Share). All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Multiple acquirers are defined as acquirers acquiring five or more targets within a 3-year period. CARs are also reported 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 deals is reported below the mean. The last row represents the differences in mean CARs for the five days [-2, +2] around the announcement day (day 0) of a takeover. P-values are provided in parentheses. [a] Denotes significance at the 1% level; [b] Denotes significance at the 5% level; [c] Denotes significance at the 10% level.

	All	Cash	Stock	Mixed
Multiple Acquirers: 1st Deals	1.72% [a]	0.71%	2.84%	3.06% [a]
	223	126	10	87
Multiple Acquirers: 2nd or More Deals	0.79% [a]	0.49% [a]	1.92%	1.15% [a]
	1490	854	36	600
Mean Diff. in CARs [-2, +2] Multiple Acquirers: 1st Deals minus Multiple Acquirers-2nd or More Deals	0.93% (0.048)	0.22% (0.663)	0.92% (0.812)	1.91% (0.026)
Multiple Acquirers: 3rd or More Deals	0.69% [a]	0.39% [b]	2.46%	1.00% [a]
	1259	722	30	507
Mean Diff. in CARs [-2, +2] Multiple Acquirers: 1st Deals minus Multiple Acquirers-3rd or More Deals	1.03% (0.030)	0.32% (0.536)	0.38% (0.923)	2.06% (0.018)
Multiple Acquirers: 4th or More Deals	0.63% [a]	0.35% [c]	2.69%	0.89% [a]
	1028	589	25	414
Mean Diff. in CARs [-2, +2] Multiple Acquirers: 1st Deals minus Multiple Acquirers-4th or More Deals	1.09% (0.024)	0.36% (0.493)	0.15% (0.971)	2.17% (0.014)
Multiple Acquirers: 5th or More Deals	0.49% [b]	0.31%	3.22%	0.57%
	777	439	19	319
Mean Diff. in CARs [-2, +2] Multiple Acquirers: 1st Deals minus Multiple Acquirers-5th or More Deals	1.23% (0.013)	0.40% (0.459)	-0.38% (0.928)	2.49% (0.006)

Table 5. Cumulative Abnormal Returns of Single Vs Multiple Acquirers for Low-order (1st Deals) Vs High-order (5th or More Deals) Deals in Diversifying/Non-Diversifying Acquisitions

This table presents the Cumulative Abnormal Returns (CARs) of single and multiple acquirers (and first and 5th or more deals of multiple acquirers) from diversifying acquisitions of private firms (Panel A) and non-diversifying acquisitions (Panel B) over the 1980 and 2004 period. An acquisition is defined as diversified when the acquirer's three-digit SIC code is different from that of the target company. An acquisition is defined as non-diversified when the acquirer's three-digit SIC code is identical with that of the target company. CARs are calculated for the five days [-2, +2] around the announcement (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 (FT-All Share). All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Multiple acquirers are defined as acquirers acquiring five or more targets within a 3-year period. Firms that do not meet the multiple acquirers' criterion are classified as single acquirers. This group includes the first bid of multiple acquirers. CARs, are also reported 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 deals is reported below the mean. The last row represents the differences in mean CARs for the five days [-2, +2] around the announcement day (day 0) of a takeover. P-values are provided in parentheses. [a] Denotes significance at the 1% level; [b] Denotes significance at the 5% level; [c] Denotes significance at the 10% level.

	All	Cash	Stock	Mixed
Panel A: Diversifying Acquisitions				
Single Acquirers	1.37% [a]	0.89% [a]	4.16% [b]	1.77% [a]
	2434	1385	97	952
Multiple Acquirers	0.73% [a]	0.34%	1.59%	1.27% [a]
	959	562	23	374
Mean Diff. in CARs [-2,+2] Single minus Multiple Acquirers	0.64% (0.006)	0.55% (0.037)	2.57% (0.245)	0.50% (0.199)
Multiple Acquirers: 1st Deals	2.03% [a]	0.41%	5.43%	4.39% [a]
	135	82	8	45
Multiple Acquirers: 5th or More Deals	0.42%	0.05%	1.74%	0.86% [b]
	487	279	13	195
Mean Diff. in CARs [-2, +2] 1st Deals minus 5th or More Deals	1.61% (0.014)	0.36% (0.572)	3.69% (0.415)	3.53% (0.011)
Panel B: Non-Diversifying Acquisitions				
Single Acquirers	1.28% [a]	1.06% [a]	3.27% [c]	1.38% [a]
	1410	745	56	609
Multiple Acquirers	0.89% [a]	0.76% [b]	2.52%	0.97% [c]
	531	292	13	226
Mean Diff. in CARs [-2, +2] Single minus Multiple Acquirers	0.39% (0.269)	0.30% (0.444)	0.75% (0.803)	0.41% (0.518)
Multiple Acquirers: 1st Deals	1.25% [c]	1.27%	-7.53%	1.64% [c]
	88	44	2	42
Multiple Acquirers: 5th or More Deals	0.60%	0.76% [c]	6.45%	0.12%
	290	160	6	124
Mean Diff. in CARs [-2, +2] 1st Deals minus 5th or More Deals	0.65% (0.396)	0.51% (0.613)	-13.98% (0.243)	1.52% (0.188)

Table 6. Cumulative Abnormal Returns of Single Vs Multiple Acquirers for Low-order (1st Deals) Vs High-order (5th or More Deals) Deals Sorted by the Relative Size of Target, Target Origin, Tobin's Q, Debt Capacity and Industry-Adjusted Capital Expenditure (CAPEX)

This table presents the Cumulative Abnormal Returns (CARs) of single and multiple acquirers (Panel A) and first and fifth or more deals of multiple acquirers (Panel B) acquiring private firms over the 1980 and 2004 period. CARs are calculated for the five 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 (FT-All Share). All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Multiple acquirers are defined as acquirers acquiring five or more targets within a 3-year period. Firms that do not meet the multiple acquirers' criterion are classified as single acquirers. This group includes the first bid of multiple acquirers. 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. Domestic acquisitions are UK targets and foreign acquisitions are non-UK targets. The Q ratio is the acquirer's market value divided by its net book value and is estimated one month before the acquisition announcement date. The low-Q acquirers are defined as those with Q<1, while the high-Q acquirers are defined as those with Q>1. The average debt capacity (in million pounds), is calculated by adding acquirer's straight debt, short-term debt, and preferred equity and subtracting cash and marketable securities ending on the date of the most recent financial information available prior to the announcement of the transaction. We rank the data available from SDC according to the average debt capacity and form high debt and low debt portfolios if they lie above or below the median, respectively. The average capital expenditure (in million pounds) represents purchases of property, plant and equipment for the 12 months ending on the date of the most recent financial information prior to the announcement of the transaction. Data of capital expenditure are obtained from SDC. We divide them by industry using the 3-digit SIC code. Last 2 columns report CARs for acquirers that have different 3-digit SIC codes from that of their targets (diversifying acquisitions) and acquirers with the same 3-digit SIC code with that of their targets (non-diversifying acquisitions), respectively. P-values are provided in parentheses. [a] Denotes significance at the 1% level; [b] Denotes significance at the 5% level; [c] Denotes significance at the 10% level.

	Small Relative Size	Large Relative Size	Domestic Targets	Foreign Targets	Low Q	High Q	Low Debt Capacity	High Debt Capacity	CAPEX (Diversifying Acquisition)	CAPEX (Non-Diversifying Acquisitions)
Panel A: Single Vs Multiple Acquirers										
Single Acquirers	0.65% [a]	1.91% [a]	1.33% [a]	1.36% [a]	2.16% [a]	1.31% [a]	2.74% [a]	1.58% [a]	1.90% [a]	2.11% [a]
	1734	2104	2711	1133	618	2789	851	734	940	632
Multiple Acquirers	0.37% [b]	1.49% [a]	0.74% [a]	0.88% [a]	0.89% [b]	0.81% [a]	1.39% [a]	0.94% [a]	1.00% [a]	1.17% [b]
	930	560	948	542	240	1144	260	377	373	255
Mean Diff. in CARs [-2, +2] Single minus Multiple Acquirers	0.28% (0.198)	0.42% (0.218)	0.59% (0.013)	0.48% (0.163)	1.27% (0.025)	0.50% (0.024)	1.35% (0.026)	0.64% (0.118)	0.90% (0.023)	0.94% (0.123)

Table 6- *Continued*

Table 6- *Continued*

	Small Relative Size	Large Relative Size	Domestic Targets	Foreign Targets	Low Q	High Q	Low Debt Capacity	High Debt Capacity	CAPEX (Diversifying Acquisition)	CAPEX (Non-Diversifying Acquisitions)
Panel B: 1st Deals Vs 5th or More Deals										
Multiple Acquirers: 1st Deals	1.12% [b]	2.33% [a]	1.99% [a]	1.05%	2.06% [b]	1.88% [a]	3.11% [b]	2.22% [c]	3.93% [a]	0.80%
	112	111	159	64	40	158	48	33	49	34
Multiple Acquirers: 5th or More Deals	0.24%	0.96% [b]	0.27%	0.83% [b]	0.37%	0.51% [b]	1.11%	0.30%	0.49%	0.58%
	508	269	476	301	124	616	110	244	209	143
Mean Diff. in CARs [-2, +2] 1st Deals minus 5th or More Deals	0.88% (0.153)	1.37% (0.086)	1.72% (0.005)	0.22% (0.797)	1.69% (0.141)	1.37% (0.025)	2.00% (0.199)	1.92% (0.134)	3.44% (0.008)	0.22% (0.887)

Table 7. Corporate Governance Characteristics, Blockholders and Cumulative Abnormal Returns of Single Vs Multiple Acquirers for Low-order (1st Deals) Vs High-order (5th or More Deals) Deals

This table presents the Cumulative Abnormal Returns (CARs) of single and multiple acquirers (and first and 5th or more deals of multiple acquirers) acquiring private firms over a period between 1990 and 2000 (and September 2001 to 2004 for blockholder ownership analysis). Cumulative abnormal returns are calculated for the five 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 (FT-All Share). All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Multiple acquirers are defined as acquirers acquiring five or more targets within a 3-year period. Firms that do not meet the multiple acquirers' criterion are classified as single acquirers. This group includes the first bid of multiple acquirers. Acquirers with 4-12 directors are classified as companies with strong corporate governance. The rest of companies in our sample are categorized as firms with weak corporate governance. Panel A reports CARs for firms with weak corporate governance and Panel B reports CARs for firms with strong corporate governance, respectively. CARs, are also reported by the method of payment. Panels C and D report CARs for firms with high and low blockholder ownership. The source of blockholder data is the Hemscott database. We rank acquirers' based on their blockholder ownership first and, then, we classify the ones above (below) the sample median as high (low) blockholder ownership acquirers. 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 deals is reported below the mean. The last row represents the differences in mean CARs for the five days [-2, +2] around the announcement day (day 0) of a takeover. P-values are provided in parentheses. [a] Denotes significance at the 1% level; [b] Denotes significance at the 5% level; [c] Denotes significance at the 10% level.

	All	Cash	Stock	Mixed
Panel A: Acquirers with Weak Corporate Governance				
Single Acquirers	1.09% [a]	1.33% [a]	2.27%	0.64%
	415	238	14	163
Multiple Acquirers	0.47%	0.21%	0.02%	0.94%
	190	118	2	70
Mean Diff. in CARs [-2, +2] Single minus Multiple Acquirers	0.62% (0.299)	1.12% (0.121)	2.25% (0.407)	-0.30% (0.778)
Multiple Acquirers: 1st Deals	2.04%	1.12%	23.73%	1.15%
	25	13	1	11
Multiple Acquirers: 5th or More Deals	0.11%	-0.01%	0.02%	0.31%
	113	71	2	40
Mean Diff. in CARs [-2, +2] 1st Deals minus 5th or More Deals	1.93% (0.063)	1.13% (0.453)	- (-)	0.84% (0.591)
Panel B: Acquirers with Strong Corporate Governance				
Single Acquirers	1.85% [a]	1.51% [a]	3.29% [c]	2.07% [a]
	994	472	39	483
Multiple Acquirers	1.36% [a]	0.65% [c]	1.28%	2.06% [a]
	389	190	6	193
Mean Diff. in CARs [-2, +2] Single minus Multiple Acquirers	0.49% (0.265)	0.86% (0.062)	2.01% (0.366)	0.01% (0.993)
Multiple Acquirers: 1st Deals	2.57% [a]	1.36%	4.30%	3.46% [b]
	74	32	2	40
Multiple Acquirers: 5th or More Deals	0.69%	0.31%	2.20%	1.01%
	177	89	4	84
Mean Diff. in CARs [-2, +2] 1st Deals minus 5th or more Deals	1.88% (0.061)	1.05% (0.326)	2.10% (0.680)	2.45% (0.146)

Table 7- *Continued*

	All	Cash	Stock	Mixed
Panel C: High Blockholder Ownership				
Single Acquirers	3.78% [a]	2.38% [a]	20.71% [b]	3.68% [a]
	278	136	12	130
Multiple Acquirers	1.93% [b]	1.78% [c]	3.48%	2.04%
	67	38	2	27
Mean Diff. in CARs [-2,+2] Single minus Multiple Acquirers	1.85% (0.077)	0.60% (0.606)	17.23% (0.184)	1.64% (0.334)
Panel D: Low Blockholder Ownership				
Single Acquirers	1.83% [a]	1.68% [a]	-0.31%	2.24% [b]
	244	146	7	91
Multiple Acquirers	0.88%	1.21%	-0.11%	0.62%
	102	47	2	53
Mean Diff. in CARs [-2, +2] Single minus Multiple Acquirers	0.95% (0.205)	0.47% (0.645)	-0.20% (0.974)	1.62% (0.174)

Table 8. Regressions of Cumulative Abnormal Returns on Single and Multiple Acquirers for Low-order (1st Deals) and High-order (5th or More) Deals

This table presents regression estimates of the acquirer's five-day cumulative abnormal return on single, multiple and all acquirers for low and high order deals, controlling for deal and acquirer characteristics. Panel A reports ordinary least squares (OLS) regression estimates. Panel B reports sample-selection corrected regression estimates using Heckman's (1979) estimation procedure. All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Multiple acquirers are defined as acquirers acquiring five or more targets within a 3-year period. Firms that do not meet the multiple acquirers' criterion are classified as single acquirers. This group includes the first bid of multiple acquirers. Low-order deals, is an indicator variable that takes the value of one if the deal is the first one conducted by a multiple bidder within a three-year period. We refer to this dummy as low-order deals dummy. High-order deals, is an indicator variable, defined as a binary variable that takes the value of one if the deal is preceded by five or more deals in the previous three years. 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. Domestic deals, is a binary variable that takes the value of 1 when the target is a domestic firm and zero otherwise. Cash flow is measured as the earnings before interest, taxes, depreciation and amortization for the last 12 months ending on the date of the most recent financial information available prior to the announcement of the transaction. High debt capacity, calculated by adding acquirer's straight debt, short-term debt, and preferred equity and subtracting cash and marketable securities as of the date of the most recent financial information available prior to the announcement of the transaction, is a binary variable with a value of 1 when the acquirer's debt exceeds the median sample debt capacity and zero otherwise. CAPEX (capital expenditure) represents purchases of property, plant and equipment for the 12 months ending on the date of the most recent financial information available prior to the announcement of the transaction. Tobin's Q ratio, is calculated as the acquirer's market value divided by its net book value one month prior to 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 $_{t-1}$ is defined as the average 6-month pre-event return. Market return $_{t-1}$ represents the average 6-month pre-event return of the FTSE All Share. Merger activity$_{t-1}$ is defined as the log of one plus the number of mergers during the 6-month pre-announcement period. Merger wave I dummy, is an indicator variable with value of one to signify increased merger activity in 1988 and 1989. Merger wave II dummy, is an indicator variable with value of one to signify the increased merger activity in 1997, 1998, 1999 and 2000. P-values are reported in brackets. [a] Denotes significance at the 1% level; [b] Denotes significance at the 5% level; [c] Denotes significance at the 10% level.

Panel A: Ordinary Least Squares Regressions

Dependent Variables	Single Acquirers	Multiple Acquirers			All Acquirers		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Intercept	0.162 [a] [0.005]	0.011 [a] [0.000]	0.029 [0.281]	0.091 [b] [0.015]	0.013 [a] [0.000]	0.043 [a] [0.005]	0.041 [a] [0.007]
Low-order deals (Dummy = 1 If 1st deal)		0.006 [0.186]		0.028 [c] [0.064]	0.004 [0.366]		0.007 [0.440]
High-order deals (Dummy = 1 If 5th or more deals)		-0.006 [b] [0.039]		-0.010 [c] [0.075]	-0.008 [a] [0.004]		-0.008 [c] [0.087]
Cash deals (Dummy = 1 If Target is Acquired with Cash and Debt)	-0.003 [0.474]		-0.004 [0.508]	-0.005 [0.406]		-0.002 [0.480]	-0.003 [0.437]
Common stock deals (Dummy = 1 If Target is Acquired with Common Stock)	0.017 [0.135]		-0.015 [0.534]	-0.016 [0.503]		0.013 [0.188]	0.013 [0.209]
Diversifying deals (Dummy = 1 If Target and Acquirer are in Different Industry)	0.001 [0.892]		0.003 [0.584]	0.003 [0.560]		-0.001 [0.872]	-0.001 [0.875]
Domestic deals (Dummy = 1 If Target is Domestic)	-0.005 [0.279]		0.002 [0.777]	0.001 [0.837]		-0.003 [0.367]	-0.004 [0.338]
Cash Flow	0.000 [0.489]		-0.000 [0.990]	-0.000 [0.773]		0.000 [0.400]	0.000 [0.489]
High debt capacity (Dummy = 1 If Acquirer has High Debt Capacity)	-0.004 [0.421]		0.002 [0.713]	0.004 [0.511]		-0.001 [0.697]	-0.001 [0.737]
CAPEX	-0.000 [0.733]		-0.000 [0.273]	-0.000 [0.289]		-0.000 [0.615]	-0.000 [0.621]
Tobin's Q	0.000 [0.523]		0.000 [0.288]	0.000 [0.202]		0.000 [0.386]	0.000 [0.373]
Log of Relative Size of Target to Acquirer	0.017 [a] [0.000]		0.026 [a] [0.000]	0.025 [a] [0.000]		0.019 [a] [0.000]	0.018 [a] [0.000]
Log of Acquirer Size	-0.005 [0.191]		0.002 [0.717]	0.005 [0.450]		-0.005 [0.136]	-0.004 [0.214]
Acquirer Return $_{t-1}$	1.190 [0.138]		3.428 [a] [0.001]	3.410 [a] [0.001]		1.525 [b] [0.021]	1.506 [b] [0.022]
Market Return $_{t-1}$	8.258 [b] [0.011]		1.507 [0.719]	-1.685 [0.696]		7.735 [a] [0.003]	7.400 [a] [0.004]
Merger Activity $_{t-1}$	-0.023 [c] [0.059]		0.002 [0.723]	-0.016 [0.107]		0.002 [0.448]	0.002 [0.414]
Merger wave I (Dummy =1 If Merger occurred in 88-89)	-0.010 [0.821]		-0.001 [0.978]	0.010 [0.727]		-0.014 [0.560]	-0.012 [0.615]
Merger wave II (Dummy =1 If Merger occurred in 97-00)	0.006 [0.409]		0.005 [0.502]	0.018 [c] [0.064]		-0.003 [0.443]	-0.003 [0.443]
F-Statistic	3.693 [0.000]	4.52 [0.011]	2.624 [0.001]	2.847 [0.000]	4.773 [0.008]	5.031 [0.000]	4.666 [0.000]
N	1532	1713	695	695	5334	2146	2146
R²	3.52%	0.53%	5.48%	6.67%	0.18%	3.42%	3.59%

Table 8- *Continued*

Panel B: Probability of Acquisitions and Sample-Selection Corrected Regressions

Dependent Variables	Multiple Acquirers				All Acquirers			
	First Stage (Probit)	(1)	(2)	(3)	First Stage (Probit)	(4)	(5)	(6)
Intercept	2.051 [a]	0.014	0.088 [b]	0.112 [b]	-3.712 [a]	-0.011	-0.027	-0.072
	[0.000]	[0.153]	[0.040]	[0.013]	[0.000]	[0.104]	[0.934]	[0.829]
Low-order deals		0.005		0.022		0.009		0.007
(Dummy = 1 If 1st deal)		[0.658]		[0.169]		[0.324]		[0.446]
High-order deals		-0.012 [b]		-0.010 [c]		-0.009 [b]		-0.008 [c]
(Dummy = 1 If 5th or more deals)		[0.039]		[0.081]		[0.046]		[0.083]
Cash deals			-0.005	-0.005			-0.002	-0.003
(Dummy = 1 If Target is Acquired with Cash and Debt)			[0.425]	[0.373]			[0.472]	[0.422]
Common stock deals			-0.022	-0.020			0.013	0.013
(Dummy = 1 If Target is Acquired with Common Stock)			[0.368]	[0.426]			[0.194]	[0.218]
Diversifying deals			0.003	0.003			-0.001	-0.001
(Dummy = 1 If Target and Acquirer are in Different Industry)			[0.620]	[0.581]			[0.875]	[0.879]
Domestic deals			0.002	0.001			-0.003	-0.004
(Dummy = 1 If Target is Domestic)			[0.736]	[0.808]			[0.361]	[0.328]
Cash Flow	-0.001 [c]		-0.000	-0.000	-0.002 [a]		-0.000	-0.000
	[0.055]		[0.143]	[0.395]	[0.000]		[0.891]	[0.781]
High debt capacity	0.371 [a]		0.024 [c]	0.015	0.075		-0.000	0.001
(Dummy = 1 If Acquirer has High Debt Capacity)	[0.001]		[0.080]	[0.306]	[0.303]		[0.974]	[0.916]
CAPEX	-0.000		-0.000	-0.000	-0.000		-0.000	-0.000
	[0.620]		[0.135]	[0.213]	[0.786]		[0.586]	[0.551]
Tobin's Q_{t-1}	0.011 [c]		0.001 [b]	0.000	0.000		0.000	0.000
	[0.066]		[0.042]	[0.151]	[0.751]		[0.387]	[0.344]
Log of Relative Size of Target to Acquirer	-0.092		0.019 [a]	0.022 [a]	-0.242 [a]		0.015	0.012
	[0.411]		[0.006]	[0.002]	[0.001]		[0.397]	[0.488]
Log of Acquirer Size	0.335 [a]		0.025 [c]	0.016	0.557 [a]		0.004	0.010
	[0.003]		[0.079]	[0.289]	[0.000]		[0.925]	[0.810]
Acquirer Return $_{t-1}$	-17.273		2.423 [b]	2.888 [b]	-12.660		1.333	1.195
	[0.391]		[0.043]	[0.019]	[0.368]		[0.234]	[0.287]
Market Return $_{t-1}$	-308.028 [a]		-18.155	-11.291	-167.393 [a]		5.229	3.370
	[0.000]		[0.126]	[0.363]	[0.001]		[0.664]	[0.781]
Merger Activity $_{t-1}$	-0.810 [a]		-0.053 [c]	-0.041	0.251 [a]		0.006	0.009
	[0.000]		[0.094]	[0.198]	[0.001]		[0.745]	[0.645]
Merger wave I	0.400		0.029	0.023	0.663		-0.005	0.002
(Dummy = 1 If Merger occurred in 88-89)	[0.431]		[0.378]	[0.478]	[0.119]		[0.917]	[0.961]
Merger wave II	0.409 [a]		0.036 [c]	0.031	0.051		-0.002	-0.002
(Dummy = 1 If Merger occurred in 97-00)	[0.008]		[0.059]	[0.100]	[0.500]		[0.683]	[0.750]
Heckman's Lambda		0.005	0.098 [c]	0.050		0.018 [a]	0.019	0.030
		[0.595]	[0.077]	[0.409]		[0.000]	[0.831]	[0.733]
Likelihood Ratio (DF=11)	110.937				152.343			
	[0.000]				[0.000]			
F-Statistic		3.049	2.664	2.726		10.96	4.717	4.412
		[0.028]	[0.000]	[0.000]		[0.000]	[0.000]	[0.000]
N		695	695	695		2146	2146	2146
R²		1.31%	5.91%	6.77%		1.51%	3.42%	3.60%

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

This table presents Fama and French (1993) 3-factor alphas for merger portfolios of single and multiple acquirers (and first and 5th or more deals of multiple acquirers). The sample of the overall portfolio for single (multiple) acquirers consists of 3378 (1336), 3206 (1269) and 2986 (1180) successful acquisition deals completed over the 1980-2002 period for 1, 2 and 3-year analysis, respectively as identified from the *Securities Data Corporation's* (SDC) *Global Financing* database. Panel A reports alphas for single acquirers and Panel B reports alphas for multiple acquirers. Multiple acquirers are defined as acquirers acquiring five or more targets within a 3-year period. Firms that do not meet the multiple acquirers' criterion are classified as single acquirers. This group includes the first bid of multiple acquirers. Panel C presents alphas of the first successful acquisition deal of multiple acquirers within a 3-year period and Panel D the alphas for their 5th or more deals, respectively. In Panels A and B 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, 24 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:

$$R_{pt} - R_{ft} = a_i + \beta_i (R_{mt} - R_{ft}) + s_i SMB_t + h_i HML_t + \varepsilon_{it}$$

The numbers in percentage represent the reported FF α, which is the average of the individual, firm-specific intercepts. Respectively, a, b an 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.

	1 year	2 years	3 years
Panel A: Single Acquirers			
All	-0.71% [a]	-0.88% [a]	-0.93% [a]
	3378	3206	2986
Cash	-0.62% [a]	-0.72% [a]	-0.64% [a]
	1885	1786	1703
Stock	-1.46% [a]	-2.01% [a]	-2.18% [a]
	134	125	118
Mixed	-0.75% [a]	-1.07% [a]	-1.20% [a]
	1359	1295	1165
Panel B: Multiple Acquirers			
All	-0.87% [a]	-1.28% [a]	-1.42% [a]
	1336	1269	1180
Cash	-0.60% [a]	-1.00% [a]	-1.15% [a]
	760	725	689
Stock	-1.87%	-1.61% [b]	-1.67% [a]
	32	30	28
Mixed	-0.86% [a]	-1.38% [a]	-1.62% [a]
	544	514	463
Panel C: Multiple Acquirers' 1st Deals			
All	0.38%	0.12%	-0.26%
	214	210	199
Panel D: Multiple Acquirers' High-order Deals (5th or More Deals)			
All	-1.14% [a]	-1.49% [a]	-1.72% [a]
	695	653	592