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WEALTH CREATION AND BID RESISTANCE IN U.K. TAKEOVER BIDS

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In this paper we investigate the determinants of, and relationship between, wealth creation and bid resistance for a sample of 178 successful takeover bids in the U.K. Within the context of an event study approach we test a range of hypotheses against a background that recognizes the existence of agency conflict and the role of corporate governance mechanisms designed to mitigate its effect. The results obtained are interpreted within the context of the U.K. corporate environment. We find that wealth creation and bid resistance are mutually dependent on each other. We find evidence suggesting the presence of managerial and financial synergy but the absence of operational synergy. Our results also suggest that there is some conflict between managers and shareholders but that significant monitoring is exercised by the particular governance mechanisms we investigate. © 1997 by John Wiley & Sons, Ltd.

INTRODUCTION

In the empirical analysis of takeovers and acquisitions the investigation of the source and degree of wealth creation has come to occupy center stage. At the same time questions have also been raised concerning the role of bid resistance. Morck, Shleifer, and Vishny (1988) distinguish between two kinds of takeovers: first, disciplinary takeovers that are designed to remove under performing management; second, takeovers designed to promote synergy by bringing together two firms that are able to perform more efficiently in concert than when operating individually. The essential thrust of their argument is that disciplinary bids will usually be resisted while synergistic bids will usually be accepted. In short, the motive behind the bid will determine the mood in which it is received. These themes are investigated further in this paper where we investigate the determinants of, and the relationship between, wealth creation and bid resistance in successful takeover bids.

There are various distinguishing features of our work that summarize the approach we have taken. The first is that the analysis is cast within a strategic management framework. At the heart of strategic management is the investigation of decisions taken by managers that enable an organization to meet its objectives. Typically, these objectives are expressed in terms of measurable performance indicators. In our work the mood accompanying a takeover bid, i.e., the response of target management to the bidding company, is taken as the key management decision under investigation and the wealth accruing to the target firm as a result of the bid is taken to be the key performance indicator.

The second distinguishing feature of our work is that, while our analysis is developed within a strategic management framework, we also draw on insights provided by other disciplines. Our work is therefore to be seen within the context of the debate initiated by Jemison (1981) and Porter (1981) at the beginning of the 1980s. It was developed further in the 1990s by Markides

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(1993), Mueller (1994) and Seth and Thomas (1994) and also by Rumelt, Schendel, and Teece (1991), and others, in a recent special issue of this journal. Such an integrative approach recognizes the contribution that other disciplines such as economics and industrial organization can make to the analysis of strategic management issues.

The final feature of note is that our empirical work focuses on the development of a simultaneous equation system in which the variables whose behavior we are trying to explain are mutually dependent. Given that our wealth variable measures the stream of income flows resulting from a takeover, it is clear that not only is wealth a function of mood (i.e., future performance is a function of managerial decision making) but that mood is also a function of wealth (i.e., managerial decisions are determined by expected performance). Investigating both variables together in this way introduces the possibility of yielding richer insights than if we investigate either variable on its own.

The results reported below are based on a sample of U.K. takeover bids and it is important to realize that they are to be interpreted within the context of a corporate climate that differs considerably from that in the United States. The overall effect of this difference is that the opportunity for managerial autonomy via bid resistance is more constrained in the U.K. than it is in the United States. There are two main reasons for this. The first reason is the difference in approach to competition policy in the two countries. In the U.K. in the 1980s the government had a predominantly noninterventionist approach to competition policy in general, and merger policy in particular. A bid was not presumed to be undesirable and had to be shown to be against the public interest before being rejected. This is in contrast to the situation in the United States in the 1980s. Throughout the decade the rising volume of merger activity was accompanied by increasing legislation at both state and federal levels that resulted in a bias against mergers, thereby favoring targets at the expense of bidders.

The second main difference between the U.K. and U.S. environments relates to the institutional setting in each country. In the U.K. the procedures surrounding a bid for a public company are regulated by the *City Panel on Takeovers and Mergers*, an organization that enforces a code of behavior embodied in the general principles and rules of the *City Code on Takeovers and Mergers*. While the authority of the Panel is recognized by the government it is nevertheless a nonstatutory organization designed to promote self-regulation. Such an approach to takeover regulation is in sharp contrast to the legislative approach followed in the United States. The cornerstone of this approach is the Williams Act of 1968, which was supplemented in the 1980s by further legislation passed at state level. In the U.K. various pre- and postbid defenses that are permissible in the United States are either forbidden or superfluous under the rules specified in the *City Code*. Once again, we find considerable differences between the U.K. and the United States. The U.K. authorities have developed a self-policing approach that is primarily concerned with promoting fair play between bidder and target and is largely neutral with respect to the outcome of a bid. This contrasts with the approach developed by the U.S. authorities based on the Williams Act that, according to Romano (1992: 51), 'has a decided tilt against bidders in favor of target managers'.

MAJOR THEMES IN MERGER RESEARCH

There are two major issues that have dominated research into merger activity. The first concerns the effects of mergers and asks whether mergers create value. The standard approach to this question in both the finance and strategic management literature has combined the theoretical insights of the efficient markets hypothesis with the empirical methodology of event study analysis (e.g., Datta, Narayanan, and Pinches, 1992). Movements in the level of share price prior to the takeover bid are used to predict the increase in value resulting from the bid for the target firm, the bidder firm and both together. In some studies (e.g., Slusky and Caves, 1991, and Palia, 1993) wealth creation is measured in terms of the bid premium, where the price at which the deal is consummated is expressed as a proportion of the price prior to the bid.

A broad consensus has emerged from this research. In the U.K. targets report gains of about 30 per cent, while bidders report losses of about 5 percent with returns overall of approximately

2 percent (Sudarsanam, Holl, and Salami, 1996). Results for the United States are similar. Target gains are usually in excess of 20 percent, with bidders usually breaking even (Datta *et al.*, 1992). Combined returns are of the order of about 10 percent (Seth, 1990). The general conclusion from the majority of these investigations is that target firms gain from the takeover, bidding firms do not lose and overall mergers are value enhancing.

The second major theme is closely associated with the first. Given that value is created via the takeover process, what is the source of this added value? Strategy theorists have long argued in favor of the benefits of corporate diversification. Ansoff (1965), Porter (1985) and Rumelt (1974), for example, all argue that the increased value generated by an acquisition is the result of synergy created by the combination of the assets of target and bidder firms. A key role is assigned to the economies of scale and scope that result when two firms are able to benefit from combining common production and marketing services. This is investigated in the work of Singh and Montgomery (1987) and Shelton (1988), who focus on the relationship between merger gains and the strategic fit between bidder and target company. Despite using different samples and different measures of relatedness they both report larger gains in related bids than in unrelated bids.

The presence of wealth gains in related acquisitions is confirmed by Seth (1990). However, she also reports the addition of value in unrelated acquisitions. This, she concludes, is associated with the coinsurance effect. Davis *et al.* (1992) argue that an emphasis on market relatedness is more likely to affect profitability, while an emphasis on production relatedness is more likely to affect growth. Such benefits, it is argued, are often available to all kinds of takeovers but more so to related takeovers than to unrelated takeovers.

More recently Markides and Williamson (1994) and Markides (1995) have argued that the superiority of related diversification over unrelated diversification rests on the ability of a firm to develop its long-run stock of strategic assets. Their empirical work provides confirmation of this.

In the work reported here we borrow from each of these two themes. We use an event study approach to measure the degree of wealth creation experienced by target firms in a large sample of takeover bids. We also investigate the role of diversification in wealth creation. However, our analysis also adds to these themes by investigating the role of bid resistance in the bid process and by assessing the contribution made by a variety of corporate governance control mechanisms. The way in which these various ideas are linked together is developed in the next section.

ANALYTICAL FRAMEWORK AND HYPOTHESES

The model developed in this paper highlights those factors that determine both the response of management to a takeover bid and the effects of the bid on the long-run performance of the firm. The detailed hypotheses we test are outlined below but at the outset we summarize the framework that forms the background to our model. An acquisition bid offers the opportunity of realizing synergy of various kinds: operational, managerial and financial. However, the extent to which synergy is realized depends on whether managers are able to set their own agenda instead of pursuing the agenda of those for whom they act as agents. Moreover, this principal–agent relationship, and the potential agency problem that arises out of it, is subject to moderation by a system of corporate governance designed to monitor managerial performance. In short, our hypotheses are developed against a background in which the synergy effects of takeover bids are a function of the principal–agent relationship and the existing system of corporate governance.

Since wealth creation and bid response are modeled as interrelated endogenous variables we proceed by discussing in turn the factors that determine the behavior of each. The hypotheses to be tested are labeled as we proceed with our discussion and for ease of reference are summarized in Table 1. We begin by considering the factors that determine the wealth creation associated with a takeover bid.

Wealth creation

The wealth creation accruing to the target firm allowing a successful takeover bid is the performance variable whose behavior is under scrutiny. In the results reported below, this is measured

Table 1. Hypotheses to be tested and expected direction of effect of each explanatory variable on the explained variables

Label	Hypothesis	Predetermined variable	Expected direction of effect
	Wealth equation (WEALTH)		
W1	Hostile bids will generate higher returns than friendly bids	MOOD	+
W2	Related bids generate higher returns than unrelated bids	INDFIT	+
W3	Underperformance in the target prior to bid will lead to increased gains post bid	VALR VALRDIF	– +
W4	Managerial equity in target firms is nonlinearly related to wealth creation	TDIRSHR TDIRSHR2	+ –
W5	Large shareholdings are inversely related to target wealth creation	LRGSHR	–
W6	Wealth creation after takeover is inversely related to the size of bidder holdings in the target firm	BTOEHOLD	–
	Mood equation (MOOD)		
M1	Wealth creation will be lower in hostile bids than in friendly bids	WEALTH	–
M2	Target management has a preference for related bids over unrelated bids	INDFIT	–
M3	Managerial holdings in target firms are inversely related to bid resistance	TDIRSHR	–
M4	Large shareholdings are significantly related to bid resistance	LRGSHR	±
M5	Bidder holdings in target firms are inversely related to bid resistance	BTOEHOLD	–
M6	Debt in bidding firm is directly related to bid resistance in the target firm	GEARDIF BIDGEAR	+ +

using an event study approach. In such an approach an attempt is made to estimate the difference between actual shareholder returns post bid and the returns that would have been received in the absence of a bid. This difference, generally referred to as the abnormal return or prediction error, is taken as a measure of wealth creation, i.e., the value-enhancing effect of the bid. Although the measurement of this effect in practice uses empirical data that typically cover a short period of time, it is important to note that our measure of abnormal returns is designed to assess long-run behavior.

Our performance measure reflects target strategic gains that follow from an acquisition and our aim is to investigate the source of these gains. When a bid is first made, subsequent events will be determined by the response of target management. The bid might be welcomed or it might be resisted and this has given rise to the distinction between hostile and friendly bids. The exact forms this resistance takes and how it is measured are discussed in detail below but for the present we note that such resistance, even if unsuccessful, ultimately results in the introduction of bargaining and negotiation that leads to an increase in the price at which a bid is finally completed. Hence, our first hypothesis is that hostile bids will be associated with higher returns than friendly bids (Hypothesis W1). Such a direct effect was found in the empirical work of Walkling (1985) and Datta *et al.* (1992) for U.S. firms and is expected for U.K. firms as well.

From our discussion of the literature in the previous section it is clear that industrial relatedness, *a priori*, is an important determinant of wealth creation in takeovers. It is argued that related mergers are associated with larger gains than unrelated mergers and on balance empirical evidence suggests that this is so. We therefore test the hypothesis that related mergers generate higher target returns than unrelated mergers (Hypothesis W2).

However, this bias in favor of related acqui-

sitions is questioned within the financial economics literature in the coinsurance hypothesis introduced by Lewellen (1971). Here it is argued that when the income streams of bidder and target firms are imperfectly correlated financial synergy may be reaped that is related to the reduced probability of bankruptcy of the combined firm. Since the income streams of firms involved in unrelated acquisitions are likely to be uncorrelated, there is room for financial synergy to be realized. Also, the income streams of firms in related mergers are likely to be more closely correlated, leaving less scope for such synergistic gains. These competing claims are discussed further when we present our results.

In addition to the possibility of operational and financial synergy, acquisitions also offer the possibility of reaping managerial synergy. Managerial synergy will arise if the bidder firm has managerial ability that is superior to that of the target firm, where managerial performance is measured in terms of company performance prior to the bid. Takeovers motivated in this way are likely to be of a disciplinary nature. The scope for such gains will be affected by the extent of undervaluation of the target company—the larger the amount of undervaluation the greater the wealth creation. Using the valuation ratio (a proxy for Tobin's *q* ratio) as a measure of managerial and financial performance prior to the bid, Servaes (1991) found a significant negative coefficient relating the valuation ratio of targets to merger premia. This relationship is tested in the results below. We also follow the approach of Lang, Stulz, and Walkling (1989), who used the *q* ratios of both bidder and target firms to investigate the hypothesis that well-managed (high *q* ratio) bidder firms take over relatively poorly managed (low *q* ratio) target firms (Hypothesis W3).

The extent to which operational or managerial synergy is associated with a bid depends in part on the existence of corporate governance mechanisms designed to curtail managerial autonomy. If these mechanisms are in place and promote the long-run interests of shareholders there will be little opportunity for target managers to depart from profit-maximizing activity prior to a bid. This in turn will limit the amount of wealth creation available to a bidder. Thus, by investigating the relationship between wealth and corporate control mechanisms we are indirectly addressing the agency issue.

The control mechanisms investigated in our model are all associated with the pattern of share ownership within the target firm. The first is managerial share ownership. The ownership of vote-carrying shares by management is motivated by the desire for direct monetary gain as well as the possibility of exercising control over the company, and these differing motives have given rise to the distinction between managerial alignment (Jensen and Meckling, 1976) and managerial entrenchment (Stulz, 1988). If the financial motive dominates the control motive the interests of management are likely to be aligned with those of the other shareholders. Alternatively, if the control motive dominates the financial motive the possibility arises that managers with significant ownership levels may engage in nonprofit-maximizing activity. In this paper, we argue that the relationship between the financial motive and the control motive depends on the level of managerial ownership. Low levels of ownership will be associated with the financial motive and high levels will be associated with the control motive. This is in keeping with the argument of Stulz (1988), who suggests the existence of a nonlinear inverted U-shaped relationship between managerial equity and wealth gains. We therefore specify our fourth hypothesis (Hypothesis W4), which is that low levels of managerial share ownership are associated with managerial alignment, while high levels are associated with managerial entrenchment.

Wealth creation will also be affected by the extent of monitoring provided by large shareholders. In the model developed by Shleifer and Vishny (1986) the presence of large shareholders effectively promotes the interests of all shareholders in the prebid period and therefore minimizes the size of potential wealth gains available from a successful acquisition. On the basis of this theory, the hypothesized relationship between large block holdings and wealth creation is a negative one (Hypothesis W5).

A third way in which ownership interests may promote effective corporate governance concerns the effect of shareholding in the target company by the bidding company prior to the bid. In the Shleifer and Vishny model above the implied relationship between bidder toehold and bid premium is an inverse one. Once again the argument is that by monitoring the decisions taken by target managers before the bid the bidding company minimizes the bid premium available in the event

of a bid (Hypothesis W6). This is supported empirically by Stulz, Walkling, and Song (1990), though Franks and Harris (1989) found such a negative impact in U.K. bids only for bidder holdings in excess of 30 percent.

Mood of the bid

The mood of a bid measures the response of target management to an offer by a raider firm and summarizes the decision-making variable under scrutiny. This response is based on managerial assessment of the merits of the bid. If the bid is unwanted it will be actively resisted by management, who then have to choose the tactics to employ in order to remain independent. Such tactics, however, are subject to regulation by the *City Panel on Takeovers and Mergers*. This body is responsible for the enforcement of the operation of the *City Code on Takeovers and Mergers*. The *City Code* is designed to ensure that target shareholders make the final decision concerning a bid and that this decision is based on the provision of up-to-date information that must be available to all shareholders. A strict timetable is adhered to once a bid is made and the bid must be completed within 60 days.

Rules exist that proscribe target management attempts to resist a bid unless it has shareholder approval at a general meeting. Such approval is required, for example, before managers can acquire or dispose of company assets to any significant extent. In short, the *City Code* limits the extent to which target management can resist a hostile bid.

Nevertheless, resistance is possible and a range of options is available to managers that can be employed in order to frustrate an unwelcome bid. For the firms in our sample the tactics adopted are discussed by Holl and Kyriazis (1997) and include the announcement of an increased dividend pay-out to discourage shareholders from selling their shares, the announcement of a profit forecast aimed at convincing shareholders that their interests are being served effectively, the revaluation of company assets thereby increasing the cost of the bid to the bidder and, in the case of related bids, the attempt to get the bid referred to the antitrust authorities in the hope that it will be blocked by the government.

Our first hypothesis concerning the determinants of the response of target management to a bid investigates the effect of expected wealth creation on mood. It is based on the model of Baron (1983). In the Baron model target management has a preference for control. When the market discounts this preference for control into its current valuation of the target firm the overall wealth effects are curtailed so that hostile bids are associated with low bid premiums. In a similar vein, Walkling and Long (1984: 55) argue in favor of an inverse relationship between bid resistance and bid premiums (Hypothesis M1). However, this has not found support in empirical work published to date. Walkling and Long report an insignificant positive relationship, though it is worth noting that their rather small sample of cash tender offers contains a number of hostile bids that were successfully resisted along with other hostile bids that were ultimately completed. Huang and Walkling (1987) also report an insignificant positive difference between returns in resisted offers compared with unresisted offers for a sample of acquisitions that included both tender offers and mergers.

Our next hypothesis concerns the effect of diversification on the response to the bid by target management. Previous investigations into the role of acquisitions in the diversification process have concentrated on the motivation of the bidding company taking the initiative and on market response to, and preference for, different kinds of diversification. No study to date, as far as we are aware, has focused on the response of the target managers to bids representing different kinds of diversification. We therefore do not know whether target managers when responding to a bid have a preference for, say, related diversification rather than conglomerate diversification. The issue is important because it raises the possibility that the preferences of target management may differ from those of the market and this immediately gives rise to an agency problem. Our hypothesis is that target management has a preference for related bids rather than conglomerate bids (Hypothesis M2). If managers are acting in the interests of shareholders they will follow the preferences of the market, and we have already argued in Hypothesis W2 that the market values related bids more highly than unrelated bids. In a recent commentary on takeovers in the United States over the last 30 years, and their contribution to the nature and extent of diversification, Shleifer and Vishny (1991) argue that the

changes in diversification that took place were clearly market led and that managers involved in acquisition decisions generally followed that lead. We return to this point later in the paper.

Finally, we return once again to the agency issue. In our discussion of the determinants of wealth creation we discussed the relationship between wealth and various shareholding variables in order to investigate the role of managerial independence. However, given that our mood variable is a measure of management decision making it provides us with a further opportunity of investigating the role of managerial autonomy. By investigating the relationship between mood and the shareholding variables previously introduced we have the opportunity of investigating more directly the agency issue. The first of these variables is the extent of managerial share ownership. In target firms where the interests of managers and owners are in alignment a bid is more likely to be welcomed than one where managers have a preference for control that is contrary to the interests of owners. Since high managerial shareholdings and owner interests are directly related we argue that bid acceptance will be associated with high target management share ownership and that bid hostility will be associated with low target management share ownership (Hypothesis M3).

Managerial response to a bid will also depend on the monitoring exercised by large shareholders. If managers are hostile to a bid their ability to reject it successfully will depend on the support they get from large shareholders. Shivdasani (1993) has recently shown that the probability of receiving a bid is significantly related to the extent to which large shareholders are affiliated to target management. He found that in target firms with close affiliation between large shareholders and target management the probability of receiving a bid is significantly lower than in firms where such close affiliation is absent. In our work, where a bid has already been received, managerial response is also likely to be affected by the support received by large shareholders and we therefore hypothesize a significant relationship between mood and large shareholders (Hypothesis M4). However, for our data it is not possible to assess the degree of affiliation between managers and large shareholders and we are therefore unable to indicate, *a priori*, the expected direction of the relationship.

The third shareholding variable likely to curtail managerial independence is the degree of share ownership by the bidder firm. Along with Walkling and Long (1984) we argue that the degree of resistance is likely to fall as the size of the bidder toehold increases (Hypothesis M5) although they were unable to provide statistical support for the argument.

Managerial autonomy may also be constrained by the financial structure of either the bidder or target firm. In particular, the amount of debt incurred by a company imposes a commitment on behalf of managers to repay in the future and this limits the amount of free cash flow available for nonprofit-maximizing investment. For this reason, incumbent management may be unwilling to support an acquisition proposal that results in taking on board further debt. We therefore hypothesize that bid resistance will be positively related to the amount of debt in the bidder firm (Hypothesis M6).

DATA AND METHODOLOGY

Sample

Our initial sample was constructed from both secondary and primary sources. The main secondary sources were the published studies of Holl and Pickering (1988), Parkinson and Dobbins (1993) and Limmack (1991). These provided a total of 287 bids for the period 1963–85. The main primary sources used were *Investors' Chronicle*, *Mergers and Acquisitions Monthly*, *Mergers and Acquisitions International*, *London Share Price Database* (LSPD), *Datastream* and *Extel* cards. These primary sources provided an additional 327 bids. After selecting bids that were successful and allowing for missing data our final sample contained 178 bids covering the period 1979–89.

Endogenous variables

Wealth creation following a takeover bid is one of the key variables whose behavior we wish to explain and in this paper we have introduced two different measures of wealth. The first is a measure of abnormal returns, defined in detail below. The second is based on the difference between the prebid announcement share price of the target firm and the price in the month of the outcome.

The correlation between the two was found to be quite high (0.65) and the results using the different measures were much the same. Since the abnormal returns measure has a better theoretical foundation, the results reported below are based on the use of this measure.

The market model was applied to monthly share price data over a 36-month estimation period to obtain cumulative prediction errors for the subsequent 6-month period. This period embraces 3 months prior to the announcement of the bid (to capture anticipated wealth effects), the bid month itself and a further 2 months during which time the bid was completed. Adjustments for thin trading were made using the procedure suggested by Fowler and Rorke (1983). From Table 2, which gives summary measures of all variables, we can see that the mean value for WEALTH for our sample is 27.9 percent, the standard deviation is 32.5 percent, the minimum value is –96.1 percent and the maximum value is 168.1 percent. However, a look at the overall distribution of WEALTH shows that the maximum value of 168.1 is a clear outlier since no other observation is in excess of 100. In order to investigate the effect of this atypical observation, we define OUTLIER, a dummy variable equal to 1 if WEALTH exceeds 100, and equal to zero otherwise. This is discussed further below.

The second endogenous variable is MOOD, which indicates whether the bid is friendly or hostile. The distinction between hostile and friendly bids is determined following detailed examination of the response made to a bid by target management as reported in the financial press. A bid is considered hostile if the target company publicly rejects the bid and also engages in a clear defense strategy such as any one or more of those discussed in Sudarsanam (1991). Such a strategy might involve incumbent management increasing the dividend pay-out or revaluing the company assets in an attempt to make the bid less attractive. Alternatively, management might divest part of the assets of the company or attempt to get the bid referred to the Monopolies and Mergers Commission in order to forestall the offer. In each case the management of the target company is signaling its active resistance to the bid by taking action that is costly to the company. A rigorous search of the financial press resulted in each bid being classified as hostile (= 1) or friendly (= 0) on the basis of the kind of criteria illustrated above.

Table 2. Descriptive measures of variables used

Variable	Mean	S.D.	Minimum	Maximum
WEALTH	27.9	32.5	–96.1	168.1
MOOD	0.3	0.5	0.0	1.0
INDFIT	0.4	0.5	0.0	1.0
VALR	1.7	1.4	0.1	12.3
VALRDIF	0.5	1.8	–10.2	8.9
TDIRSHR	11.6	18.4	0.0	82.3
LRGSHR	21.1	22.0	0.0	88.0
BTOEHOLD	3.5	10.0	0.0	63.9
GEARDIF	0.0	0.2	–1.0	0.5
BIDGEAR	0.5	0.1	0.2	0.8
LSIZE	1.6	1.5	–2.2	6.7
CYCLE	0.6	0.5	0.0	1.0
SINGLE	0.8	0.4	0.0	1.0
CASH	0.1	0.2	0.0	1.0
OUTLIER	0.0	0.1	0.0	1.0

Predetermined variables

From our discussion in the previous section, we have introduced a range of predetermined variables to be used in the regression analysis that follows.

INDFIT is a measure of relatedness between bidder and target. The Stock Exchange Industrial Classification (SEIC) which classifies industries at a level of disaggregation akin to the 2-digit SIC was used to classify takeovers as related (INDFIT = 1) if both companies were classified as being in the same SEIC group and unrelated (INDFIT = 0) otherwise.

We have two variables that measure market valuation. The first is VALR, which is the valuation ratio of the target firm and is introduced as a measure of financial performance before the bid. It is a proxy for Tobin's *q* ratio and is defined as the market value of the company at the end of the fourth month before the bid divided by the book value of equity. The second valuation variable is VALRDIF, which measures the difference between VALR of bidding and target companies.

We have a number of variables that measure ownership interests and the agency issue. TDIRSHR is defined as the proportion of shares of the target firm held by its directors, while LRGSHR is defined as large shareholdings held

by individuals or institutions, i.e., ownership that collectively amounts to at least 5 percent of the total equity.

BTOEHOLD is defined as the percentage of shares of the target company owned by the bidding company management before the bid.

The final predetermined variables are gearing ratios. GEARDIF measures the difference in gearing between bidding and target company and BIDGEAR measures gearing in the bidding company. Gearing is expressed in each case as total debt over the book value of total assets.

Control variables

In addition to the endogenous and predetermined variables discussed above we introduce a variety of other variables whose effects need to be controlled in the multivariate analysis. LSIZE measures the relative size of bidder and target company. It is defined as the natural log of the ratio of the market value of the bidding company to the market value of the target company at the end of the fourth month prior to the bid.

We also need to control for the association between takeover activity and the business cycle (Maule, 1968; Nelson, 1966). Our measurement of cyclical variation is based on the approach followed by the Central Statistical Office (1975, 1993), in which a composite coincident indicator is used to define growth cycles in the economy over the period 1958–92. Using this approach we define CYCLE as a dummy variable set equal to 1 when economic activity is above trend, 0 otherwise.

The effect of multiple bids is measured by SINGLE—a dummy variable set equal to 1 if there is a single bidder and equal to 0 if there are multiple bidders.

Finally, we control for the method of payment accompanying the bid, distinguishing between pure cash offers on the one hand and all other offers on the other. We therefore define CASH as being equal to 1 if payment is made solely in terms of cash and 0 otherwise.

A listing of all variables used and a range of descriptive statistics for each are given in Table 2.

Model and estimation

The basic equation system that we have chosen to estimate is as follows:

$$\text{WEALTH} = f\,(\text{MOOD, INDFIT, VALR, TDIRSHR, TDIRSHR2, LRGSHR, BTOEHOLD, LSIZE, CYCLE, SINGLE, CASH, OUTLIER}) \quad (1)$$

$$\text{MOOD} = f\,(\text{WEALTH, INDFIT, TDIRSHR, LRGSHR, BTOEHOLD, GEARDIF, LSIZE, SINGLE, CASH}) \quad (2)$$

These two equations represent our basic model, though variations occur during the course of estimation. For example, VALRDIF is used in place of VALR in Equation 1 and BIDGEAR is used in place of GEARDIF in Equation 2.

Given that our model consists of two mutually dependent endogenous variables we need to choose an appropriate method of estimation. This suggests the use of a two-stage approach that takes into account the mutual dependence between WEALTH and MOOD. However, we first tested for possible exogeneity of WEALTH in the MOOD equation and vice versa using a Hausman test. Our testing procedure (Maddala, 1988) led to the conclusion that each variable has the statistical characteristics of an exogenous variable, making it appropriate to estimate the wealth equation using least squares and the mood equation using logit regression. The Breusch–Pagan test showed that heteroskedasticity was present in Equation 1 and appropriate adjustments were made by using the estimator proposed by White (1980). The results were generated using LIMDEP 6.0 and at all stages of estimation the structure of the model was monitored to ensure that each equation was identified.

RESULTS

We begin our discussion of the results with Table 3, which shows the monthly average prediction errors for bidders and targets in our sample along with their *t* ratios. Although our analysis centers around target returns, we also present returns to bidders. This allows us to check our data and results with those published elsewhere. From Table 3 it can be seen that significant gains of approximately 3.1 percent and 21.6 percent were made by targets in the month prior to the bid and the bid month respectively. Bidding compa-

Table 3. Mean, standard deviation and *t* values of monthly average prediction errors for bidders and targets

Month	Mean	S.D.	*t* statistic
	Bidders		
−3	−0.0039	0.087	−0.60
−2	−0.0062	0.132	−0.95
−1	−0.0045	0.107	−0.58
0	−0.0173[a]	0.099	−2.43
1	−0.0129[b]	0.088	−2.02
2	−0.0125[b]	0.085	−1.99
	Targets		
−3	0.0025	0.118	0.29
−2	0.0196[b]	0.153	1.78
−1	0.0308[a]	0.135	3.15
0	0.2161[a]	0.198	15.22
1	0.0097	0.114	1.15
2	0.0031	0.106	0.36

[a] Significant at 0.01 level based on one-tail test.
[b] Significant at 0.05 level based on one-tail test.

nies, on the other hand, just broke even over the period 2 months prior to the bid. They also recorded small but significant losses of at most 1.7 percent for the bid month and each of the following 2 months. This is broadly in keeping with results of other studies for both the United States and the U.K. Datta *et al*. (1992), for example, reported target gains of 22 percent in the bid month and bidder gains of less than 1 percent, while Sudarsanam *et al*. (1993) using daily data and different models from the one used here reported cumulative gains of 30 percent for targets and cumulative losses for bidders of 5 percent over the period 2 months either side of the bid.

Our discussion of the data in the previous section makes it clear that we have an outlier problem in our sample. WEALTH has one observation with a value of 168.1 percent that is clearly out of line with the rest. In order to monitor the effect of this problem we introduced the variable OUTLIER defined above. We found that the values of the coefficients of all variables in the equations were very robust and were barely affected by the presence or absence of this variable. Its coefficient has a value ranging from 137.1 to 139.5, which means that the value of the outlier observation is higher than the mean of WEALTH for the sample by an amount varying between 137.1 and 139.5 (see Table 2). The coefficient of OUTLIER is highly significant in each case.

WEALTH equation

The results for Equation 1 are contained in Table 4, where the market valuation ratio variable enters in two different ways. This results in two estimated equations for WEALTH. The overall fit of the equations is satisfactory, with values for the coefficient of determination of 0.34 and 0.33. Each value is highly significant.

With Hypothesis W1 we investigate the effect of MOOD on WEALTH. From Table 4 we see that rejection of a bid by target management is associated with an increase in abnormal returns of 17.2 percent and 18.1 percent in the two equations, which is approximately one half of the average gain for all firms in our sample. With *t* ratios in excess of 3 MOOD is highly significant. The bargaining and negotiation that usually follow the rejection of a bid significantly increase the wealth effects of a bid even when the bid is ultimately successful.

With respect to Hypothesis W2, which investigates the effect of industrial relatedness on wealth gains, our results are not convincing. The sign of the coefficient of INDFIT is negative in both equations, suggesting that unrelated takeovers generate greater wealth gains than those achieved in related takeovers. This is in keeping with the presence of financial synergy associated with the coinsurance effect rather than with operational synergy associated with strategic diversification. But with *t* ratios of −0.6 and −0.7 our confidence in this conclusion is extremely low. Similar results were reported for U.S. firms by Seth (1990). It could be argued, of course, that our measure of industrial relatedness is fairly crude and may not be accurate enough to pick up the hypothesized effect. However, while we recognize the limitations of our measure, we will see below that it has a significant effect in the mood equation. It is also to be noted that the same variable proved highly significant in another study by the authors (Holl, Dassiou, and Kyriazis, 1995) that investigated the wealth effects of bidder and target firms in failed mergers using an asymmetric information model in which industrial relatedness had a key role to play.

Our results provide strong support for Hypoth-

Table 4. Least squares estimates of the parameters of the WEALTH equation incorporating White's adjustment for heteroskedasticity

Predetermined variable	Coefficient	*t* statistic	Coefficient	*t* statistic
CONSTANT	31.81[a]	4.8	24.11[a]	3.8
MOOD	17.23[a]	3.6	18.05[a]	3.8
INDFIT	−2.59	−0.6	−2.92	−0.7
VALR	−3.69[a]	−3.4		
VALRDIF			2.47[a]	2.7
TDIRSHR	−0.06	−0.2	0.01	0.0
TDIRSHR2	0.01	0.1	−0.00	−0.3
LRGSHR	−0.23[b]	−2.0	−0.23[b]	−2.0
BTOEHOLD	−0.41[b]	−2.0	−0.33[c]	−1.5
LSIZE	5.30[a]	4.0	5.36[a]	4.0
CYCLE	5.59[c]	1.4	5.75[c]	1.4
SINGLE	−7.27	−1.2	−7.84[c]	−1.3
CASH	−35.80[a]	−4.2	−34.65[a]	−4.0
OUTLIER	137.06[a]	27.3	139.50[a]	32.5
R^2	0.34[d]		0.33[d]	

[a,b,c] Significant at 0.01, 0.05, or 0.10 level respectively based on a two-tail test, unless specified as a one-tail test in Table 1.
[d] Significant at 0.01 level of significance using an *F*-test.

esis W3, which investigates the relationship between the market valuation of the target prior to the bid and the resulting wealth creation. The coefficient of VALR is negative and the coefficient of VALRDIF is positive. Each is significant at a level of 0.01. Our results, therefore, provide strong support for the hypothesis that high-valued bidding companies are taking over lower-valued target companies in order to reap wealth gains. Servaes (1991) found similar results for U.S. firms.

The relationship between wealth creation and managerial share ownership is investigated in Hypothesis W4, where it is argued that these variables are nonlinearly related, with managerial alignment associated with low levels of ownership and managerial entrenchment associated with high levels of ownership. For target company managers we attempt to capture this form of nonlinearity by including managerial equity (TDIRSHR) and the square of managerial equity (TDIRSHR2) in the equation and constraining the coefficient of the former to be positive and the coefficient of the latter to be negative. From the results obtained Hypothesis W3 is rejected. In the first equation reported in Table 4 the signs of TDIRSHR and TDIRSHR2 are negative and positive respectively, which gives a U-shaped relation rather than an inverted U-shaped one, though neither variable is significant. In the second equation the signs of the coefficients are as expected but again neither variable is significant.

Hypothesis W5 is concerned with the monitoring of target company performance by large shareholders. The results provided in Table 4 suggest that where such monitoring exists the opportunity for wealth gains is limited. Each equation shows that on average an increase in holdings of large shareholders by 10 percentage points is associated with lower target wealth gains of approximately 2.3 percentage points. This difference is significant at the 5 percent level. We conclude that our results support the analysis of Shleifer and Vishny (1986), who argue that the existence of large shareholdings by institutions and other major shareholders monitors the activity of management and limits the extent of the agency problem.

Shleifer and Vishny also argue that the size of the premium obtained in an acquisition is inversely related to the size of toehold held by the bidder. In Table 4 the coefficients of BTOEHOLD are −0.41 and −0.33, with the former being significant at the 0.05 level and the latter at a level of 0.1. These values suggest that an increase in the bidder toehold of 10 percentage points is associated with a decrease in the value created by 4.1 percentage points in one case and 3.3 percentage points in the other. In the results reported by Stulz *et al.* (1990, Table III, all 104

firms) an increase in the bidder toehold by 10 percentage points is associated with a decrease in (normalized) abnormal returns (conditional on the total takeover gain) of approximately 7 percentage points.

With respect to the control variables we find that LSIZE and CASH are highly significant. Higher returns are reported when large bidding companies take over small target companies and when payment is offered in noncash terms. There is also a weak suggestion that returns are higher when the overall level of economic activity, as measured by CYCLE, is above trend.

We can summarize our results for the wealth equation as follows. First, bid resistance by incumbent management increases the wealth creation accruing to target firms. Second, we find no evidence of operational or financial synergy but we do find evidence of significant managerial synergy. Third, significant monitoring is exercised by large shareholders and, to a lesser extent, by shareholders in the bidding firm.

MOOD equation

Our results for the mood equation are given in Table 5. Two equations are presented that differ only in the way in which the gearing variable is defined. Once again the overall fit, as measured by the log ratio index, is highly significant.

There is clear indication of a direct relationship between WEALTH and MOOD in both equations with *t* ratios of 2.9 and 3.1. The rejection of a bid by hostile management is more likely to take place when wealth creation in the target firm is high. This is clearly out of line with the prediction of the Baron model. Why should this be so? In the Baron model discussed above, and in the efficient markets hypothesis, all known information is discounted by the market in its assessment of the bid. However, the market is not able to account for privileged information that may be in the possession of the target firm and this may cause wealth creation to have the direct effect on bid resistance reported here.

Hypothesis M2 investigates the argument that takeovers that promote synergy are more likely to be welcomed by target management but that takeovers with a disciplinary motive are more likely to be resisted. Our results, however, provide evidence in favor of the opposite conjecture. The coefficient of INDFIT is significant in both estimates of Equation 2 at a level of 5 percent. The positive sign indicates that related takeover bids designed to promote synergy are more likely to receive a hostile reception than unrelated bids. This is in contrast to the evidence reported for U.S. firms (Walkling and Long, 1984). Note that this preference for unrelated bids on the part of target management is in contrast to the indifference revealed by the market as shown by our results for Equation 1. We discuss this further in the next section.

Hypothesis M3 is confirmed. Our data display a highly significant inverse relationship between MOOD and TDIRSHR. Low target director share-

Table 5. Logit estimates of the parameters of the MOOD equation

Predetermined variable	Coefficient	*t* statistic	Coefficient	*t* statistic
CONSTANT	−1.38[a]	−2.2	−3.28[a]	−2.8
WEALTH	0.02[a]	2.9	0.02[a]	3.1
INDFIT	0.87[b]	2.0	0.73[b]	1.7
TDIRSHR	−0.11[a]	−3.4	−0.11[a]	−3.3
LRGSHR	−0.01	−1.1	−0.01	−0.7
BTOEHOLD	−0.00	−0.0	0.00	0.0
GEARDIF	3.48[a]	2.9		
BIDGEAR			4.11[b]	2.3
LSIZE	−0.37[b]	−2.2	−0.39[b]	−2.4
SINGLE	1.17[b]	2.3	0.98[b]	2.0
CASH	1.71[b]	1.8	1.56[b]	1.8
LRI	0.250[d]		0.234[d]	

[a,b,c] Significant at 0.01, 0.05 or 0.10 level of significance respectively based on a two-tail test unless specified as a one-tail test in Table 1.
[d] Significant at 0.01 level of significance using a χ^2 test.

holdings are associated with hostile bids. This is in keeping with results reported by Walkling and Long (1984, Table 5), who found that target director shareholdings were lower for contested bids than for uncontested bids. This was so for directors as a whole as well as for individual top directors. Similarly, Morck *et al*. (1988, Table 4.1b) found that in hostile bids equity ownership by the board of directors, equity ownership by the top two officers and the dollar value of top officers' stake were all significantly lower than in friendly bids.

Our results do not provide support for Hypothesis M4. The estimated relationship between MOOD and LRGSHR shows the anticipated negative sign in each of the two equations but the associated t ratios of −1.1 and −0.7 means that we are unable to reject the null hypothesis of no relationship. Large shareholders do not significantly influence target managers' response to a takeover bid.

The effect of bidders' toehold is considered in Hypothesis M5. The results show that the mood of a successful bid is not significantly affected by BTOEHOLD. The expected sign is obtained in only one of the equations and in each case the coefficient is insignificant. Overall our results show that bidder shareholdings in the target firm contribute very little to the probability that a bid will be resisted.

The effect of financial structure on managerial response to a bid is measured here by GEARDIF and BIDGEAR. In the former case we are measuring the difference in debt between bidder and target firm, while in the latter we are measuring debt in the bidder firm alone. In each case we expect a direct relationship with MOOD. This is confirmed in Table 5, where GEARDIF is significant at a 0.01 level while BIDGEAR is significant at a level of 0.05. Target managers have a clear preference for bids from companies whose level of gearing is low absolutely and relative to their own level of gearing.

So far as the control variables are concerned we find that bid hostility is significantly associated with small bidder size relative to that of the target, cash payment rather than noncash payment and single bids rather than multiple bids.

Finally, we summarize our results for the mood equation. First, we find that expected wealth gains are positively related to bid resistance. Second, target managers have a preference for conglomerate bids that is not in keeping with the market's indifference between related and conglomerate bids. Third, both managerial equity in the target firm and gearing levels in the bidder firm are significantly related to bid response and thereby limit managerial autonomy.

DISCUSSION AND CONCLUSION

In this paper we have modeled the determinants of, and the relationship between, wealth creation and bid resistance in a sample of successful U.K. takeover bids. The main results obtained are as follows. First, bid resistance has a significant, direct effect on wealth creation. Second, we found a significantly positive sign for the effect of wealth on bid resistance in the mood equation. We have argued that this unexpected result may well reflect the inability of the market to account for privileged information held by the target firm. Third, we report the presence of managerial and financial synergies but the absence of operational synergies. Finally, we find that significant monitoring is exercised by the particular governance mechanisms we investigate. In the remainder of this section we discuss these results in the light of current debate in the areas of diversification, the agency problem and corporate governance.

Diversification

Our empirical results suggest that in the 1980s in the U.K. the market valued related bids no differently from conglomerate bids but that incumbent managers, when responding to bids, showed a clear preference for the latter. We interpret this result in the light of reported trends from the 1960s to date.

Channon (1982: 82) has shown that among the largest 200 firms in the U.K., the number of dominant businesses reached a peak around 1960, while the number of related businesses peaked around 1970. However, the number of conglomerate businesses doubled between 1970 and 1980 (from 9% to 18%) at precisely the time when the numbers of dominant and related businesses were on the wane. It is also apparent that the latter half of the 1980s was a period of strategic adjustment when firms used the corporate control market to undo some of the conglomeration of the previous period. This is confirmed by Chiplin

and Wright (1988), who estimate that by 1985 46 percent of all changes in control in the U.K. consisted of the divestment of subsidiaries via management buyouts or via sale from one parent to another. In 1980 the figure was 36 percent. Given that our period of estimation embraces the whole of the decade of the 1980s our results for the wealth equation seem to reflect the market's preference for conglomeration in the first half of the period and a move away from conglomeration in the second half of the period. This is consistent with the work of Grant and Thomas (1988), who report a quadratic relationship between diversification and profitability among U.K. firms.

However, it is apparent from our results for the mood equation that this change of assessment by the market was not matched by a changed response by target managers. Their preference for conglomerate bids persisted for the whole period, suggesting that managers were not responding appropriately to the signals being given by the market.

Agency problem

Previous investigations of the agency issue in the area of acquisitions have concentrated on the relationship between profitability and managerial share ownership. In the work pursued here this relationship was investigated in the wealth equation and we found no significant evidence of alignment or entrenchment. However, we have found alternative evidence that suggests an agency problem exists.

First, as discussed above we find that for the firms in our sample managers have a preference for unrelated bids that is out of line with the preference of the market. This is consistent with the argument that managers are investing in suboptimal diversification. If there is a quadratic relation between profitability and diversification as suggested above, it follows (see Markides, 1993) that there is a point beyond which the marginal costs of further diversification exceed the marginal benefits, causing profitability to fall. Our results are consistent with the argument that for the firms in our sample the market is aware of such diseconomies but that target managers are not.

Second, we have found evidence of considerable managerial synergy in our sample. The abnormal returns of targets in completed mergers are inversely related to the market valuation of the target prior to the bid and directly related to the difference in market valuation of bidder and target prior to the bid. Well-managed bidder firms are taking over underperforming target firms in the expectation that the superior management skills present in the former can be put to good use in managing the latter.

Corporate governance

The principal–agent relationship is closely aligned with corporate governance mechanisms and although we have found some evidence of an agency problem we have also found evidence suggesting that this is curtailed by the operation of a system of corporate governance.

The monitoring role of a system of corporate governance can be performed by a range of different mechanisms that have recently been discussed by Hart (1995). Prominent among these are the monitoring provided by managerial compensation, the existence of large block shareholdings by institutions or individuals, shareholdings by the bidder firm, the financial structure of the firm and board composition (usually measured by the influence exerted by nonexecutive board members and the separation of the roles of chairman and chief executive). In this study we have chosen to concentrate on the first four.

Moreover, the discipline exercised by these controls can be of two kinds: first, that which is exercised on an ongoing basis prior to the bid; second, that which is exercised at the time of the bid, which by definition is more short run in nature. In our model we have attempted to capture the effects of the first kind in the wealth equation, where the performance measure is a long-run indicator, while attempting to capture the effects of the second kind in the mood equation where the dependent variable reflects managerial decision making in response to the bid.

Our results suggest that the four mechanisms represented in our model make a significant contribution to the exercise of effective corporate governance. In the wealth equation we find that the size of wealth gains associated with a bid are inversely related to the size of large shareholdings, suggesting that institutions and other large shareholders exercise an effective monitoring role. We also find that a similar role is played by bidder firms that hold shares in the target firm

prior to the bid. In the mood equation we find that share ownership by target managers is closely related to bid resistance. An important part of managerial compensation comes from share ownership and while director holdings are not related to wealth creation they are related to the managerial response to a bid. High director holdings are associated with bid acceptance and low holdings with bid rejection. If managerial autonomy is reflected in bid hostility it is curtailed in firms in which director holdings are high. It is also apparent that target managers are more likely to welcome a bid if the bidder is a low-debt firm both in absolute terms and relative to the target.

It is interesting to note the difference between long-run and short-run effects. Our results highlight the difference between discipline exercised prior to the bid and discipline exercised at the time of the bid. The effect of the former is more long run in nature, while the effect of the latter is more immediate. Our results suggest that large shareholders and bidder shareholdings exercise ongoing discipline prior to the bid, while director holdings and the financial structure of the bidding company exercise more immediate discipline at the time of the bid. In the light of these results we suggest that future research in this area ought to differentiate more clearly between long-run and short-run discipline and investigate why different mechanisms operate over different time horizons.

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