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HOSTILE TAKEOVERS AND INTANGIBLE RESOURCES:  
AN EMPIRICAL INVESTIGATION

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by

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## **Hostile Takeovers and Intangible Resources: An Empirical Investigation**

This study investigates the causes of hostile takeover activity. A sample of 185 firms which experienced hostile takeover bids between 1981 and 1988 is contrasted with a sample of control firms which did not receive hostile bids. Special attention is given to concerns that hostile takeovers disrupt firms with rent-generating intangible resources. Hostile target firms have lower profitability than other firms in their core industry, are more likely to have lower market to book ratios and high span, and are less likely to have high R&D/sales accompanied by a high market to book ratio. This shows that hostile takeover targets tend to be poor diversifiers and are unlikely to be high value innovators. These findings collectively suggest that the market for corporate control targets firms which have not succeeded in developing rent-generating intangible resources. No evidence is found which supports undervaluation and stakeholder expropriation theories of gains from hostile takeovers.

Perhaps the most controversial type of restructuring in the 1980s was the hostile takeover. In a 1991 Clark Martire & Bartolemeo survey of 173 Fortune 500 CEOs, 69 percent of respondents felt that hostile takeovers have hurt the economy while only 22 percent felt that they had helped (*Fortune* 1991: 73). These CEOs criticized hostile takeover attempts for sapping executive time, cutting research and capital spending and increasing debt. Those who praised hostile deals pointed to their ability to discipline complacent firms, cut payroll and mothball projects not involved in core objectives. The ire directed against hostile takeovers, in part, reflects the large number of uninvited tender offers launched in the 1980s. More than 300 firms were subject to hostile takeover attempts in the 1980-1990 period (see Table 1).

The CEO's minority view that hostile takeovers are a means of disciplining inefficient management is well-established in the literature. Manne's (1965) argument that a market for corporate control works to replace poor management teams has been extensively developed in the literature. Michael Jensen (1986), a prominent advocate of the benefits of an active market for corporate control, argues that managers squander cash flow on poor investments in many public companies. Jensen reasons that hostile takeovers and leveraged buyouts force the payout of excess cash flow.

Critics of hostile takeover activity question the proposition that corporate raiders can offer superior management services to beleaguered companies. For example, Carl Icahn's tenure at TWA following his successful hostile bid has seen the company file for Chapter 11 bankruptcy. Others counter that many firms which are taken over in hostile transactions are broken apart in a value-increasing manner. Bhagat, Shleifer and Vishny (1990) document the high rate of asset sales following hostile takeovers. Yet, even if hostile takeovers cause companies to be broken apart they may still fail to cause assets to be better managed. Companies which have achieved

synergies across strategic business units may be damaged by "bust ups." The potential damage wrought by hostile deals on strategic business combinations was recognized by the Delaware Chancery Court in its 1989 *Time* decision. The Court argued that Paramount's unsolicited cash tender offer for Time could be rejected because of a pre-existing strategic plan designed to enhance long-term shareholder value. Important elements of such strategic plans may involve exploitation of firm-specific human resources, product innovations, marketing knowledge and synergies from co-management of related business units.

The main purpose of this paper is to empirically investigate the hypothesis that firms which have succeeded in creating value through diversification and innovation programs are frequent targets of hostile takeovers. The intent is to shed light on arguments that hostile takeovers have damaged valuable intangible corporate resources. The paper then empirically contrasts this hypothesis with the alternative hypothesis that hostile takeovers primarily serve to remedy shareholder-manager agency problems and discipline managers who invest excess cash flow unwisely. The analysis also explores two subsidiary hypotheses: (1) that hostile takeovers target undervalued but strong companies and (2) that hostile takeovers harm stakeholders including employees, union members and pensionholders.

Surprisingly, little previous attention has been given to the potential damage that hostile deals may bring to firms which have created value through long-term strategies of diversification and exploitation of valuable firm-specific knowledge and resources. Hitt, Hoskisson and Ireland's (1990) argument that acquisitions reduce management's commitment to innovation suggests that hostile takeovers, especially when accompanied by high leverage, may cause managers to scale back on innovation.

## **THEORY AND HYPOTHESES**

A hostile takeover involves an extreme change in the business environment. A new management team assumes control of a firm and typically replaces many high and middle level employees. Bhagat, Shleifer and Vishny (1990) document layoffs following roughly half of hostile takeovers. Asset divestitures were also widespread. Approximately two thirds of the firms in the Bhagat, Shleifer and Vishny sample undertook major divestitures. Firms which survive a hostile offer typically experience poor performance (Fowler and Schmidt, 1989). Because of the high level of layoffs following takeover by a corporate raider, Bhagat, Shleifer and Vishny (1990) characterize firms run by raiders as transitory business organizations. This important finding motivates the principal hypotheses investigated in this paper. To the extent that the operating environment of the firm is highly levered and short-term oriented it will typically cause major changes in operating decisions.

### **Hostile Takeovers and the Exploitation of Intangible Resources**

An important impact of the shift to a short-term, cash flow-oriented operating environment brought by a hostile takeover may be to hinder the effectiveness of strategies oriented towards creating and exploiting intangible corporate resources. The importance of intangible resources in determining firm performance has been emphasized by Penrose (1959) and Wernerfelt (1984). Pressure to generate high cash flow to satisfy the objectives of a raider and debt obligations is likely to increase management's aversion towards undertaking growth-oriented investments. Mansfield (1969) has documented the high failure rate of innovative investment projects. Many of these investments involve development of firm-specific knowledge and skills and experiments

in diversification (see Biggadike, 1979 and Lippman and Rumelt, 1983). Consequently, a manager of a firm which has been taken over through a hostile transaction will be unlikely to undertake the costly and risky investments necessary to create and exploit intangible resources. Hitt, Hoskisson and Ireland (1990) agree that many acquisitions are likely to reduce management's willingness to assume the risk involved in innovation.

A further adverse impact of a hostile takeover may be to cause effective incumbent managers to leave for other positions which have the original operating environment of the target firm (Fray, Down and Gaylin, 1985; Walsh, 1989). These managers are likely to possess important knowledge of the firm's employees, technology and organizational capabilities that are necessary to successfully exploit intangible resources. Employees which remain following a hostile takeover typically have low morale and little desire to cooperate with a new management team (Fowler and Schmidt, 1989).

The shift towards achievement of high, immediate financial performance also calls for an alternative set of organizational controls (Hoskisson and Hitt, 1988) centering on monitoring of business unit performance. Financial and formal bureaucratic controls of an organization are likely to hamper management's ability and commitment to innovate and exploit firm-specific resources (Baysinger and Hoskisson, 1989). The less formal behavioral controls more likely prior to the arrival of a hostile bid enhance the pursuit of innovation (Hitt, Hoskisson and Ireland, 1990). The above arguments concerning the difficulty of exploiting valuable intangible resources in a transitory, financially oriented business organization suggest the following hypotheses:

*Hypothesis 1a: Research-intensive organizations with valuable options for long-term growth are unlikely targets of hostile takeovers.*

*Hypothesis 1b: Profitable businesses are unlikely targets of hostile takeovers.*

The latter hypothesis follows from the important role of intangible resource development in determining profitability (Rumelt, 1984; Hansen and Wernerfelt, 1989; Teece, Pisano and Shuen, 1990). A rational corporate raider, thus, will find it relatively difficult to create value by a hostile bid when a firm has a large stock of research and related intangible resources.

One organizational type that is particularly vulnerable to shifting from informal controls to more strict financial controls is the synergistic, diversified firm. Interdependence across businesses increases the difficulty of evaluating the value added by any particular division business manager (Jones and Hill, 1988). Such organizations are naturally among the most likely to develop and exploit intangible resources across business units (Bettis and Hall, 1982). This leads to the following additional hypothesis:

*Hypothesis 2: Diversified businesses with valuable intangible resources and capabilities are poorly suited for hostile takeovers.*

One of the most important repositories of a firm's knowledge capital is its employees. Human resource intensive firms thus are among the most vulnerable to hostile takeovers given employee freedom to leave the firm after a change of organizational environment. Problems may exist with employees that remain who lose their incentive to build and apply specific knowledge in an unstable and transitory environment (Marks, 1982). This suggests a third hypothesis:

*Hypothesis 3: Human-resource intensive organizations are poorly suited for the transition to a financially-oriented, transitory business environment.*

The preceding analysis has outlined the two principal hypotheses tested in this study. These hypotheses differ but do not entirely exclude the most commonly given rationale for hostile takeovers: the failure of management-shareholder contracting.



### **Agency Theory and Hostile Takeovers**

The rise of hostile takeover activity in the 1980s has been widely interpreted as the response of the market for corporate control to problems in shareholder-management agency. The theory of agency problems has a long history beginning with Berle and Means (1932) and Marris (1964). Manne (1965) suggested that takeovers are a means of remedying inefficient management practice. This argument has been developed and tested extensively (Jensen and Meckling, 1976; Jarrell and Bradley, 1980; Fama and Jensen, 1983; Shleifer and Vishny, 1986; Jarrell, Brickley and Netter, 1988; Butz 1991; Walsh and Ellwood, 1991). When the top managers of a firm fail to exploit opportunities for value-creation they expand the scope for an outside entrepreneur to profitably assume control. The agency-theoretic perspective offers several distinct strands of thought regarding the source of managerial inefficiencies.

### *Deadwood Managers*

An important argument articulated by Manne (1965) is that takeovers replace incompetent managers. Management teams may not be competent to achieve the highest value from a firm's resources a variety of reasons including incapacity, overextension, lack of experience, change in business environment. Entrenched and incompetent managers offer the most compelling rationale for the hostile takeover (T. Boone Pickens, 1986). Walsh and Ellwood (1991) examine the argument that takeovers discipline managerial "deadwood" by showing that poor pre-acquisition performance is followed by abnormal post-acquisition management turnover. Post acquisition turnover most likely represents the pruning of deadwood managers. Perhaps the clearest evidence of management incompetency is the past performance of the firm. This suggests:

*Hypothesis 4. Firms with below average profitability are more likely to be the target of a hostile takeover.*

#### *Ex Ante Contracting Failure*

Another strand of the literature explains management inefficiency as a contracting failure. Management runs a firm poorly because it lacks the incentive to do better. Here managers are not deadwood insofar as they could create value given a contract which aligns their interests with those of shareholders (Fama and Jensen, 1983). Contracting failure may occur because management is not rewarded for performance (Holmstrom, 1979 and Jensen and Murphy, 1989), because management is unwilling to assume the risks involved in maximizing value (Hirshleifer and Suh, 1991) or because the firm has a suboptimal debt-equity ratio (Jensen and Meckling, 1976; Myers, 1977). A hostile takeover offers an extreme solution to contracting failure given that large shareholder-led recontracting efforts should be able to correct sufficiently serious problems (Butz, 1990). In many cases a hostile takeover may be attempted but fended off by managers who obtain more incentive-oriented contracts or divest poorly performing divisions. One of the most controversial types of contracting failure arises when managers make arrangements which shield the firm from hostile takeovers. These arrangements may involve the adoption of poison pills, golden parachutes or supermajority voting provisions (Jarrell, Brickley and Netter, 1988). While such provisions may make hostile takeovers more costly, they can actually invite hostile bids by signalling contracting failure. This suggests the following hypotheses:

*Hypothesis 5a: Defensive contractual provisions (e.g. poison pills and supermajority voting provisions) increase the likelihood of a hostile takeover by signalling contractual failure.*

*Hypothesis 5b: Defensive contractual provisions deter hostile takeovers by increasing the cost of completing a hostile bid.*

A classical symptom of contractual failure is excessive and inefficient diversification. Managers who do not enjoy the same objectives as shareholders often wish to increase firm size through diversification to reduce risk (Amihud and Lev, 1981). Growth in size itself may be a shelter from hostile takeovers and ouster by the Board of Directors (Shleifer and Vishny, 1988). A lengthy literature dating at least back to Mueller (1969) suggests that conglomerate mergers are used to gain the higher pay given to managers of large firms. This literature is surveyed by Seth (1990) and Weidenbaum and Vogt (1987). Recent contributions include Chatterjee (1986), Singh and Montgomery (1987), Wernerfelt and Montgomery (1988), Baysinger and Hoskisson (1989), Morck, Shleifer and Vishny (1990), and Comment and Jarrell (1992). It is plausible that many hostile takeovers are motivated by the gains from dismantling poorly diversified firms. This leads to the following hypothesis:

*Hypothesis 6: Firms with histories of poor diversification are likely targets of hostile takeovers.*

#### *Ex Post Contracting Failure*

An alternative view sees shareholder-management contracts as optimal when signed. After the fact, however, they may be suboptimal and difficult to change. In particular, a firm's investments may yield greater cash flow than expected. In these circumstances, managers have an incentive to reinvest cash flow in low return projects (Stulz, 1989). One remedy for this type of *ex post* contractual failure is a hostile takeover. Indeed, Jensen (1986, 1988) has argued that an important purpose of the market for hostile takeovers and leveraged buyouts is to force firms

with high cash flow that lack good investment opportunities to pay cash flow to outside investors.

The free cash flow argument for leveraged buyouts has been empirically studied by Lehn and Poulsen (1989), Singh (1990), Liebeskind, Wiersema and Hansen (1992) and Opler and Titman (1992). Similarly, Mitchell and Lehn (1990) show that targets of hostile takeovers often have poor previous acquisitions records, suggesting that they used their resources unwisely. However, they do not link levels of cash flow to vulnerability to hostile takeover. An important hypothesis suggested by the free cash flow theory which differs from Hypotheses 1a and 4 is the following:

*Hypothesis 7: Firms with above average cash flow are likely targets of hostile takeovers.*

### **Stakeholder Expropriation**

Hostile takeovers may be motivated by gains obtained from breaking implicit contracts with employees and other stakeholders in the firm. Shleifer and Summers (1988), for example, find that substantial wage reductions followed the takeover of TWA by Carl Icahn and proceed to argue that gains in hostile takeovers may often come from breaching previous implicit agreements with employees and their labor unions. Rosett (1989) finds that wage reductions of union employees cannot explain all of the premia paid in acquisitions. Because labor unions are often viewed as a mechanism through which employees gain rents from firms and are sometimes targeted in hostile deals (e.g. Dan River) the following hypothesis is tested:

*Hypothesis 8: Firms with significant employee unionization are likely targets of hostile takeovers.*

Of course, employees may be damaged by hostile takeovers even without cuts in union wages.

Pontiff, Shleifer and Weisbach (1990) show that reversions of excess pension assets are more common after hostile than after friendly takeovers. This suggests that one motive for hostile takeovers is to reduce employee compensation in the form of promised pension payments. Firms with employees vulnerable to this reduction are those with relatively high pension expense.

*Hypothesis 9: Firms with high pension expense per employee are likely targets of hostile takeovers.*

Earlier, I suggested that employee-intensive organizations make poor hostile targets because of problems that may occur post-takeover with human resources. The employee expropriation theory would suggest the opposite. Labor-intensive firms offer relatively more scope for wage reductions and pension reversions.

### **Misvaluation**

One interpretation of the high rate of asset divestitures following hostile takeovers is that raiders are taking advantage of undervaluation of firms in the capital market. T. Boone Pickens gained fame, for example, by pointing out that it was cheaper to buy oil on Wall Street than to drill for it. LeBaron and Speidell (1987) have characterized the 1980s as the age of corporate valuation when raiders exploited differences in firm's underlying asset values and their stock prices. One problem with the undervaluation explanation of takeover activity is that it is not consistent with the widely established market efficiency hypothesis (Jensen, 1988). Firms should not be undervalued in an equilibrium because they would otherwise offer profits without commensurate risks to ordinary investors. Brennan (1990), however, shows that misvaluation may persist in an equilibrium because asymmetric information problems hinder efforts of investors to identify and

exploit it. He argues, therefore, that the large premia paid in some takeovers such as that of RJR/Nabisco may indeed reflect misvaluation. Brennan's argument points to a means of testing the undervaluation explanation of hostile takeovers. To the extent that firms are more difficult to value they are more likely to be misvalued in an equilibrium. This leads to the following hypothesis:

*Hypothesis 10: Firms which are more difficult for outsiders to value are more likely to be the target of hostile takeovers.*

One way to observe outsider valuation of firms is through analyst estimates of future earnings.

### **Previous Literature**

There have been relatively few studies which have examined the characteristics of hostile takeover targets. Mitchell and Lehn (1990) show that hostile targets have poorer acquisition records and similar ownership structure as friendly targets. Morck, Shleifer and Vishny (1988) show that hostile targets are likely to have growth rates and be in lower  $q$  industries than do friendly targets. They interpret this evidence as showing that hostile target firms are more likely to be mature firms in declining industries. Other factors examined in their study had little power to distinguish hostile and friendly targets. Similarly, Browne and Rosengren (1987) found no factors which statistically distinguished hostile takeover targets from other firms besides their size. These authors concluded that hostile target firms were not appreciably different from other targets of merger and acquisition activity. Palepu (1986) predicts the incidence of takeovers of all types from a general population. Palepu finds that takeover targets have lower growth and leverage than other firms but do not differ in their levels of profitability. This study differs from

previous studies in two main respects. First, it examines an expanded set of hypotheses—especially the possibility that hostile target firms have high levels of intangible resources. Second, it compares a fairly large group of hostile targets to control firms. This increases the statistical power of the analysis and leads to results which are richer than found in most previous analyses.

## METHODS

This study investigates the theories and hypotheses established in the preceding section by comparing the characteristics of firms that have been the target of a hostile takeover attempt to those that have not. The relative importance of various explanations for hostile deals can be indirectly assessed by comparing the characteristics of hostile targets to a control sample of non-target firms. This section identifies the sample used for this analysis and describes empirical proxies for characteristics hypothesized to predict the incidence of hostile takeovers.

### Sample

The sample of firms analyzed in this study is drawn from a listing of firms covered by the *Value Line* Investment Survey in 1980. Mark Mitchell and Ken Lehn examined the incidence of control related activity for all of these firms from 1980 to 1988 and kindly provided the data for use in this study. The sample is more fully described in Mitchell and Lehn (1990). The firms in *Value Line* have an aggregate market value of more than 95 percent of the total market value of publicly traded firms in the United States.

Financial characteristics of firms in the sample were obtained from the COMPUSTAT II



PST, Research and Full Coverage files. Information about firm's diversification was constructed using establishment level data on employment taken from the 1981, 1983, 1985 and 1987 versions of the *TRINET Large Establishment Data Base*. Unionization data was provided by Joe Tracy. Data on the presence of defensive measures including poison pills and antitakeover charter provisions was provided by Jonathan Karpoff and was compiled from various sources including DeAngelo and Rice (1983) and Jarrell and Poulsen (1987). Tim Devinney provided a list of new product announcements from the *Wall Street Journal*. This list was used to construct a dummy variable which took the value one when a firm had announced three or more new products and zero otherwise.

### **Panel Design**

The characteristics of hostile takeover targets are examined using univariate tests and binary logit regressions on a panel dataset consisting of all firms in the *Value Line* Survey as of 1980 which were successfully matched with TRINET diversification data and COMPUSTAT financial data. Because the TRINET data are biannual, a panel design was employed with four two-year periods of data per surviving firm. These periods were 1981, 1983, 1985 and 1987. No takeover in the sample was initiated before 1981 or after 1988. Firm characteristics at the beginning of 1981 are used to predict firms which became hostile takeover targets in the 1981 and 1982, while data at the beginning of 1983 was used to predict takeovers in 1983 and 1984 and so on. Table 2 shows the number of hostile takeover targets in the sample in each biannual period in the panel and the number of control firms. In total the sample contains data on 185 hostile takeover targets and approximately 700 control firms.



### Measurement Procedures

The hypothesis that firms with above average profitability are likely hostile takeover targets is tested using a dummy variable which identifies firms which had a ratio of income before interest, taxes, depreciation and amortization (EBITDA) to sales below the industry median. Firm diversification can be measured in a variety of ways. Perhaps the simplest is span-a count the number of separate SIC codes in which the firm has establishments. This measure is computed at the four-digit SIC level using TRINET. Tobin's  $q$ , the ratio of the market value of a firm's liabilities to the replacement value of its assets, has been widely used as a measure of the firm's effectiveness in using its resources to generate value (Lindenberg and Ross, 1976). The argument that poor diversifiers are more likely hostile takeover targets (Hypothesis 6) suggests that the relation between span and the likelihood a hostile takeover is contingent on the level of  $q$ . This possibility is operationalized by observing whether span predicts hostile bids better for firms which have below the average  $q$  in their core industry. Tobin's  $q$  is operationally defined as the market value of a firm's equity plus the book value of its debt over the book value of its assets. This definition has been shown to be highly correlated with other definitions which more closely take account of the replacement value of assets using inflation adjustment (Wiles, 1990). A firm's ratio of research and development expense to sales is used as a generalized proxy for its level of intangible assets. R&D-intensive firms are likely to have developed firm-specific resources (Singh and Chang, 1992). The value of those resources for future growth and profitability can be assessed by looking at the interaction of a dummy for below average  $q$  multiplied by the firm's R&D/sales ratio. Firms with high  $q$  and high R&D intensity would be the most likely to be using internal innovation as an important means of creating value and future

earnings growth opportunities. Other important intangible resources are a firm's marketing capital. Advertising-intensive firms are likely to have achieved greater brand name recognition and product differentiation with consumers. Likewise, firms which have announced unique products are likely to have achieved greater potential for establishing brand name capital. Firms with high brand loyalty may be less vulnerable than firms with other types of intangible capital insofar as brand names can be sold off in a transitory, cash flow-oriented organizational environment (e.g. RJR Nabisco's divestiture of Del Monte). The level of a firm's unionization is difficult to measure directly because data on the fraction of unionized employees is highly imperfect and is often based on surveys. Thus, at the recommendation of Joe Tracy of Yale, a labor economist who provided the data used here, I have created a dummy variable which takes the value one when any of the firm's employees are covered under a collective bargaining agreement. Barriers to takeover activity can be explicit in the form of poison pills and antitakeover charter amendments or implicit (Shleifer and Vishny, 1988). One important implicit barrier is firm size insofar as financing arrangements needed to takeover large corporations are more difficult to arrange, especially through bank and junk bond financings. Firm size is measured as the log of the book value of a firm's assets. While informational asymmetry affects the likelihood of firm undervaluation, it is very difficult to measure. One measure which has been used elsewhere (Lang and Litzenberger, 1989) is the dispersion of analyst earnings forecasts for a firm. Analysts are likely to arrive at divergent forecasts when firms are difficult to value because they are diversified or have imperfectly observable assets.

## **EMPIRICAL RESULTS**

### Characteristics of Hostile Takeover Targets

The results of univariate analyses of the characteristics of hostile takeover targets are reported in Table 3. The table shows that 42.2% of hostile takeover targets have income below their industry average while control firms had below average income only 33.8% of the time. This difference is statistically significant at the 5 percent level and is consistent with Hypothesis 1b and Hypothesis 4 which argue that hostile takeover targets have low profitability. The result is not consistent with the free cash flow theory which suggests that hostile takeover targets would have high profitability and poor growth prospects.

The table shows that hostile takeover targets operated in an average of 15.6 4-digit SIC industries whereas the average span of control firms was 13.1 industries. This difference is statistically significant at the 10 percent level. The greatest difference in span occurred among firms with below industry average Tobin's q (10.8 for hostile targets vs. 6.7 for control firms). This large difference is statistically significant at the 1 percent level and is consistent with Hypotheses 2 and 6 that unsuccessful diversifiers make good hostile takeover targets. It is not consistent with the fear expressed by plaintiffs in the *Time* decision that hostile takeovers can damage valuable strategic business resources. Another indicator of the value of strategic resources is a firm's R&D intensity. The mean R&D intensity of hostile takeover targets is approximately half that of control firms. This difference is the most statistically significant observed in this study. Similarly, hostile takeover targets are about as half as likely to be major product innovators (3.8% chance versus a 7.4% chance). The difference in R&D intensity is lowest among firms with below average Tobin's q, indicating a particularly large difference among firms with above average Tobin's q. This suggests that high-value, research-intensive

organizations are only rarely the target of hostile takeovers--a finding which is strongly consistent with Hypothesis 1a that firms with rent-providing intangible resources are unlikely targets. This finding too is inconsistent with the fear expressed by many CEOs that hostile takeovers disrupt strategically successful businesses.

Somewhat surprisingly, advertising expenses do not differ appreciably among targets of hostile bids and non-targets. Given that advertising is a major means of building marketing capital, it is apparent that hostile takeovers are not deterred by the presence of all types of intangible firm assets. This is likely to be caused by the lower levels of damage that a hostile deal may cause to a firm's brand name capital relative to, say its human capital. It is difficult to test the proposition that firms which generate high rents from its human capital are more likely to be the target of a hostile bid because human capital is not measurable with available data. One crude proxy is the employee to sales ratio. There is no statistically significant difference in the employee/sales ratio between hostile targets and controls.

The theory that hostile takeovers expropriate employees receives no support in this study. Employee intensity, pension expenses and frequency of unionization differ little in the hostile takeover and control subsamples. Similarly, defensive measures did not appear to have an appreciable effect on hostile bids. This may be because these measures are ineffective or because the various effects of these measures on the incidence of hostile activity offset each other. Table 3 also shows that hostile targets are somewhat larger than control firms. This suggests that hostile bids are not appreciably deterred by size alone.

The misvaluation explanation for hostile transactions is difficult to test directly since misvaluation is not directly observable. One trait likely to be associated with misvaluation,

however, is the extent of analyst earnings forecast uncertainty. There appears to be little statistically significant difference in the levels of analyst forecast disagreement between the hostile targets and the control firms. This is not consistent with the misvaluation explanation but, because of the proxy is indirect, it offers relatively weak evidence against it.

### **Multivariate Analysis**

The results for multivariate prediction of hostile takeover targets are reported in Table 4. Because full data are not available on analyst earnings forecast disagreement two models are used. The first covers a broader range of firms but excludes analyst disagreement. The second includes an estimate of the effect of analyst forecast disagreement on the probability of a hostile takeover and has a smaller sample size.

The dummy variable for below industry profitability is positively related to the likelihood of a hostile takeover and is statistically significant. As in the univariate analysis, the below average  $q \times$  span variable is also an important predictor of hostile takeovers (but only using the larger sample in Model 1). The other significant predictor of hostile takeovers was the R&D/sales ratio.

Variables which were significant in the univariate analysis which are not statistically significant in the multivariate analysis include span, below average  $q \times$  R&D/sales, the product innovator dummy, and the log of assets. The effects of these variables are captured by other variables in the analysis.

## **DISCUSSION**

This study has investigated the determinants of hostile takeover activity. The main results show that firms which have low profitability and both low Tobin's q and high span are likely targets of hostile takeovers. Given that firms with low Tobin's q are likely to have create little value from their resource base, these results show that hostile takeovers target poor diversifiers. This is consistent with the argument that one of the main roles of hostile transactions is to force breakup of low synergy conglomerates. This finding paints a different picture than that voiced by many critics that hostile deals target productive, high synergy organizations. This picture is supported by the finding that firms which have high q and high research and development expenses are particularly unlikely hostile takeover targets. High q, high R&D firms can be characterized as having successfully developed a base of rent-generating intangible resources. Such firms appear to be poorly suited for the transitory, financially-oriented business environment which typically follows a hostile transaction.

Others have argued that hostile takeovers frequently damage important stakeholders such as employees and suppliers. This study offers no evidence consistent with this argument. Firms which are labor-intensive, unionized and generous in their pension expenditures are no more likely than other firms to be the target of hostile takeovers. Somewhat surprisingly, firm's defensive measures including poison pills and supermajority voting provisions also have no visible impact on the incidence of hostile takeover activity. Apparently, these barriers are not able to deter corporate raiders.

A final criticism of hostile takeovers suggests that they target firms which are undervalued because of capital market inefficiency. While this argument is consistent with the finding of previous authors that hostile targets have lower market values relative to book than other firms

it receives no support in this study. Not only are firms with high amounts of intangible assets which are likely to be difficult to value less likely to be taken over, but firms which analysts explicitly have difficulty in evaluating are no more likely to be taken over than other firms.

In conclusion, this study leaves us with a better understanding of the causes of the hostile takeovers of the 1980s. Overall, the results show that poor diversifiers and firms which have failed to build rent-generating strategic resources were the most frequent targets of hostile takeovers. This characterization suggests that the market for corporate control responds largely to strategic failure by U.S. corporations. In past studies, the market for corporate control has largely been examined from an agency-theoretic perspective. While this perspective is not incompatible with the view that hostile deals remedy strategic failure, it overlooks the sources of managerial failure and appears to overemphasize the importance of high free cash flow as a source of corporate failure.

Table 1. Number of contested and uncontested tender offers

Year	Number of Uncontested Offers	Number of Contested Offers
1980	41	12
1981	47	28
1982	39	29
1983	26	11
1984	61	18
1985	52	32
1986	94	46
1987	114	26
1988	146	62
1989	113	39
1990	53	7
Total	786	310

Source: Mergerstat Review for 1980-1985, W. T. Grimm & Co, 1986. and M&A Magazine, May/June 1991, p. 14.



Table 2. Distribution of Sample Firms by Period.

Period	Number of hostile targets	Number of control firms
1981-82	39	687
1983-84	34	693
1985-86	80	623
1987-88	32	554
Total	185	2,557

Table 3. T-tests for differences in mean characteristics of hostile takeover targets with control firms which did not experience a hostile takeover bid in the 1981-88 period. The sample has 2,557 firm years of data for firms which received no hostile bid and 185 firms which received hostile takeover bids.

Variable	Mean for hostile bid	Mean for no hostile bid	t-statistic
Below average income dummy	42.2%	33.8%	2.31**
Span	15.6	13.1	1.83*
Below average q x span	10.8	6.7	2.92***
R&D/sales	0.0085	0.0165	5.64***
Below average q x R&D/sales	0.0046	0.0067	2.09**
Advertising to sales	0.013	0.015	0.71
Product innovator dummy	3.8%	7.4%	2.43**
Employees to sales	1.24	1.23	0.11
Pension expense per employee	\$73,700	\$73,600	0.004
Unionization dummy	25.4%	22.1%	1.06
Defensive measure dummy	30.3%	28.1%	0.64
Log of assets	6.50	6.21	2.21**
Analyst disagreement <sup>a</sup>	.225	.188	0.71

<sup>a</sup> This variable is available for 105 hostile takeover targets and 1,380 control firm-years.

\*\*\* Significant at  $p < 0.01$

\*\* Significant at  $p < 0.05$

\* Significant at  $p < 0.10$

Table 4. Characteristics of hostile takeover targets: Comparison with *Value Line* firms not experiencing a hostile takeover bid (dependent variable: probability of receiving a hostile bid). The sample has 185 hostile targets and 2,557 firm-years for control firms.

	Model 1	Model 2 <sup>a</sup>
Below average income	0.27* (2.79)	0.49** (4.89)
Span	-0.0091 (0.81)	-0.0091 (0.53)
Below average $q \times$ span	0.021** (4.89)	0.012 (1.06)
R&D to sales	-14.5** (5.44)	-18.1** (5.59)
Below average $q \times$ R&D/sales	-2.13 (0.06)	3.03 (0.08)
Advertising to sales	-0.32 (0.01)	3.17 (0.77)
Product innovator	-0.11 (0.05)	0.15 (0.08)
Employees to sales	0.042 (0.26)	-0.018 (0.01)
Pension expense to employees	-0.056 (0.42)	0.0052 (0.01)
Unionized firm	0.0028 (0.01)	0.12 (0.23)
Defensive measure	0.054 (0.10)	0.22 (1.01)

Table 4 continued

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Log of assets	0.11 (2.19)	0.087 (0.64)
Analyst earning forecast uncertainty	—	0.10 (0.17)
Constant	-3.32*** (45.3)	-3.24*** (18.5)
Log-likelihood	1316.7	733.1
Chi-squared	37.9	25.5
p	0.0002	0.02

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<sup>a</sup> This regression is based on data for 105 hostile targets and 1,380 control firm-years.

Chi-squares for coefficients are reported in parentheses

\*\*\* Significant at  $p < 0.01$

\*\* Significant at  $p < 0.05$

\* Significant at  $p < 0.10$

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