

The Effects of Corporate Antitakeover Provisions on Long-term Investment: Empirical Evidence

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This paper's empirical results indicate that the average effect of antitakeover provisions on subsequent long-term investment is negative. The interpretation of these results depends on whether one thinks that there was too much, too little, or just the right amount of long-term investment prior to the antitakeover provision adoption. We use agency theory to devise more refined empirical tests of the effects of antitakeover provision adoption by managers in firms with different incentive and monitoring structures. Governance variables (e.g. percentage of outsiders on corporate boards, and separate CEO/chairperson positions) have an insignificant impact on subsequent long-term investment behavior. However, consistent with agency theory predictions, managers in firms with better economic incentives (higher insider ownership) tend to cut subsequent long-term investment less than managers in firms with less incentive alignment. Furthermore, managers in firms with greater external monitoring (due to higher institutional ownership) also tend to cut subsequent long-term investment less than managers in firms with less external monitoring. Thus, the decrease in subsequent long-term investment is significantly less for firms where the managers have greater incentives to act in shareholders' interests. Finally, there are interesting effects of the control variables. First, high book equity/market equity firms cut total long-term investment more. Second, firms that were takeover targets or rumored to be takeover targets cut long-term investment more. These results suggest that inefficient firms cut long-term investment more when an antitakeover provision is adopted. © 1997 John Wiley & Sons, Ltd.

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INTRODUCTION

This paper examines the effects on the long-term investment policy of firms that introduce antitakeover provisions and examines the determinants of the cross-sectional variation in long-term investment changes. Negative and statistically significant stock price effects of the adoption of an antitakeover provision are well documented.¹ However, the results of prior research on the effects of antitakeover provisions on subsequent long-term investment are ambiguous.² In addition, the interpretation of any change in long-term investment after an antitakeover

provision adoption is dependent on the researcher's belief about the appropriateness of the level of long-term investment before the antitakeover provision. Therefore, in this paper, we have *two objectives*. First, we attempt to reconcile the conflicting empirical results of the effects of antitakeover provisions on subsequent long-term investment. Second, we offer refined empirical tests to distinguish among competing theoretical rationales for subsequent changes in these long-term investments.

The empirical results of this paper indicate that firms that adopt antitakeover provisions significantly decrease subsequent long-term investment on an industry-adjusted basis. The interpretation of this decline, however, is ambiguous, since we do not know if the firms had too little, too much, or just the

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right amount of long-term investment prior to the antitakeover provision adoption. We use agency theory to devise more fine-grained empirical tests of the effects of antitakeover provision adoptions. We regress the (industry-adjusted) changes on the observable variables suggested by agency theory. Several of these variables enter the regressions as significant. Firms with higher insider holdings (suggesting better economic incentives) and firms with higher institutional holdings (suggesting better monitoring capabilities and incentives) show a significantly smaller decline in long-term expenditures. In addition, those firms that were under takeover pressure cut long-term expenditure significantly more than those firms that were not under takeover pressure.

This paper thus demonstrates that corporate governance actions (i.e. antitakeover provision actions) have an impact on subsequent strategic decisions (i.e. long-term investment). Characteristics of the firms' ownership structure, which agency theory suggests should align managers' actions with shareholder interests, are important determinants of the behavior of managers of firms after the adoption of antitakeover provisions.

The paper proceeds as follows. The next section provides theoretical perspectives on antitakeover provisions and describes the agency theory variables used in this paper. The third section describes the data that are used and the sources of the data. The fourth section discusses this paper's methodology. The fifth section presents the results of average changes in long-term investment and the cross-sectional regressions of the change in long-term investments on firm-specific characteristics suggested by agency theory. The final section provides a discussion and conclusions.

ANTITAKEOVER PROVISIONS AND THEIR EFFECTS ON LONG-TERM INVESTMENT

Theoretical Perspectives

In response to the increase in takeovers in the 1980s, innovations in corporate antitakeover provisions took on a variety of forms, with corporate charter antitakeover amendments and poison pill securities among the most common antitakeover provisions (Blair, 1995; Jarrell and Poulsen, 1987). This section discusses the major hypotheses on the economic effects of antitakeover provisions. Six antitakeover

provisions are examined in this paper: poison pill provisions and five corporate charter antitakeover amendments (supermajority provisions, classified board provisions, fair-price provisions, reduction of cumulative voting provisions, and anti-greenmail provisions). The Appendix gives a brief description of each type of antitakeover provision.

From a theoretical perspective, the rationales for the rise of antitakeover provisions from management can be placed into two conflicting categories: the *shareholder welfare hypothesis* and the *managerial welfare hypothesis*. Supporters of the shareholder welfare hypothesis emphasize the difficulties in managing firms for long-term competitiveness while under the constant threat of a takeover. It is argued that the fear of a takeover causes managers to focus their attention too closely on current earnings at the expense of long-term investments. Antitakeover provisions, it is argued, increase the target management's power in negotiating better deals with 'raiders' whose intentions are to acquire the firm's assets at an unreasonably low price. In response to the difficulties in managing a firm while under the constant threat of takeover, responsible managements propose and support antitakeover provisions to facilitate actions that are in the long-run best interests of the firm.³

On the other hand, supporters of the management welfare hypothesis warn that insulating managers from competition in the takeover market for corporate control (Manne, 1965) can also have negative effects on long-run competitiveness. Erecting barriers to competition in the market for corporate control may lead to entrenched managers who have decreased incentives for cutting costs, increasing efficiency, and/or investing in projects with long lead times. Consequently, the long-run competitiveness of firms can be compromised. Critics of antitakeover provisions indicate that these provisions are proposed and supported by opportunistic or inefficient managers as mechanisms that insulate management from the necessary competition from the takeover market, which, if allowed to function properly, would replace these same managers.

This paper considers the implications of these two competing theoretical perspectives derived from agency theory concerning the causes and effects of antitakeover provisions. The agency theory of the firm (Jensen and Meckling, 1976; Levinthal, 1988; Mahoney, 1992) highlights the inherent potential for conflict in the relation between principals (i.e. the owners of the firm) and agents (e.g. top manage-

ment).⁴ In particular, this paper studies the effects of the adoption of antitakeover provisions on subsequent changes in long-term investment. Specific attention is paid to the effects of mechanisms which potentially attenuate the agency problems inherent in the separation of ownership and control, namely, ownership structure and corporate board structure.

Cross-sectional Variations in Changes in Long-term Investment

It is important to stress that the above hypotheses *cannot* be used to predict the sign (positive or negative) of the change in long-term investment. The difficulties in interpreting subsequent changes in long-term investments of firms adopting antitakeover provisions stem from the fact that there is no consensus concerning the appropriate level of investment by the firm. Two contradictory theories of long-term investment have been put forth in the literature. One theory suggests that an increase in long-term discretionary expenditure leads to positive shareholder wealth, as firms take on positive net present value (NPV) projects to the benefit of shareholders.⁵ An opposing theory suggests that increased long-term discretionary spending is associated with decreased shareholder wealth, especially for firms with cash flows that exceed those required to fund all positive NPV projects.⁶ Therefore, given these two opposing views of long-term expenditures, examination of subsequent changes in long-term investment expenditures alone (as previously done by researchers) cannot determine whether the managers are acting in the best interests of shareholders.

A better interpretation of long-term investments by managers after the adoption of an antitakeover provision may be obtained by examining differences in the behavior of managers of firms with varying degrees of economic incentives or with varying degrees of board independence. For example, if the managers of a firm with high insider holdings (indicative of a high degree of alignment between shareholder and manager incentives) behave differently from the managers with low insider holdings, based on agency theory we can attribute the difference in behavior to the effects of economic alignment. Furthermore, we assume that managers with high insider holdings are acting in the best interests of shareholders, thereby enabling us to test the hypotheses regarding the impact of antitakeover provisions on long-term investments. Similarly, differences in the long-term investment of managers

of firms with varying degrees of board independence also enable us to interpret the effects of antitakeover provisions on long-term investments.

Therefore, as a more refined test of the competing hypotheses we examine the association of firm-specific characteristics on the cross-sectional variation of changes in long-term investments. This paper assumes that economic incentives and governance structure align the actions of management and the objectives of shareholders. In particular, firm-specific characteristics are expected to lead to managerial decisions that are closely aligned with shareholder interests (Malekzadeh and McWilliams, 1995). One potentially important characteristic is the firm's ownership structure. One measurement of ownership structure is the percentage of equity owned by top management [*INSIDER OWNERSHIP*]. Greater insider holdings are expected to lead to decisions that are in the best interest of shareholders, due to the direct wealth impacts on managers when their actions affect share price (Buchholtz and Ribbens, 1994).

Another measurement of ownership structure is the percentage of equity owned by major institutions in the United States [*INSTITUTIONAL OWNERSHIP*]. Greater institutional holdings (e.g. public pension funds) are expected to lead to decisions that are in the best interest of shareholders, due to the greater incentive of larger institutions to spend resources to closely monitor firm decisions (Agrawal and Mandelker, 1990, 1992; Demsetz, 1983; Kochar and Parthiban, 1996; Van Nuys, 1993). The size of institutional investments, which are typically large, provides institutions with a greater incentive to expend resources to monitor management actively for two reasons. First, they are able to internalize more of the benefits from participation in the voting process (Allen, 1993; Aoki, 1984). Second, given the size of their voting power, institutional investors have a greater potential of influencing the outcome of the voting process (Brickley, Lease and Smith, 1988; Sundaramurthy, 1996).

Both high insider ownership and high institutional ownership tend to align the behavior of firms' management with the shareholders' objectives. *Agency theory predicts higher insider holdings and higher institutional holdings lead to more managerial decisions consistent with shareholder wealth maximization.*

Another potentially important characteristic of the firm that may align the actions of management with the interests of shareholders is the composition of the board of directors (Hermalin and Weisbach, 1988;

Johnson, Daily and Ellstrand, 1996; Zahra and Pearce, 1989).⁷ Greater independent oversight of managements is expected to lead to managerial decisions more in line with shareholder interests (Daily and Dalton, 1994a,b; Seward and Walsh, 1996). Agency theory suggests that more independent boards of directors provide better monitoring if management seeks to act opportunistically (Gibbs, 1993; Kosnik, 1990; Pearce and Zahra, 1991, 1992).⁸ Independent board structure is measured in three ways.

First, the proportion of outsiders (not current or previous executives of the firm or its subsidiaries) on the board [*OUTSIDER PERCENTAGE*] is meant as a proxy for independent oversight of the decision of the board (Baysinger and Hoskisson, 1990; Davis, 1991; Hoskisson and Turk, 1990; Singh and Harianto, 1989a).⁹ Boards with a higher percentage of outside board members are likely to provide more independent oversight of management.

Second, the proportion of outside members who were not hired during the incumbent CEO's tenure on the corporate board is used as a more fine-grained measure of independent outside board representation [*PRE-CEO OUTSIDER PERCENTAGE*]. Outside directors' allegiances are at least in part a function of how they achieved their board seats (Gordon and Pound, 1993). Since the independence of outside board members can depend on who nominated them to the corporate board, those board members not nominated during the current CEO's tenure are likely to be more independent of the CEO and current management (Boeker, 1992; Wade, O'Reilly and Chandratat, 1990; Westphal and Zajac, 1994).

Third, *SEPARATE CEO/CHAIRPERSON* is a dummy variable set equal to 0 if the CEO and chairperson of the board are the same individual and set equal to 1 if the two positions are held by different individuals. This variable is meant as a proxy for an independent audit of the decisions of management (Berg and Smith, 1978; Boyd, 1995; Finkelstein and D'Aveni, 1994). Some authors have argued that having the same person act as CEO and chairperson of the board creates a conflict of interest in the independent monitoring role of the board (Jensen, 1993; Lorsch and MacIver, 1989; Pi and Timme, 1993; Rechner and Dalton, 1991; Sundaramurthy, Mahoney and Mahoney, 1997). In serving simultaneously as CEO and chairperson of the board, a CEO should have a greater influence among board members (Mallette and Fowler, 1992) hampering the board's independent monitoring capacity (Beatty

and Zajac, 1994). Therefore, an independent CEO-chairperson structure is more likely to give rise to better monitoring of managerial decisions.

Finally, six control variables are added to the analysis in order to control for their firm-specific impact that may influence managerial decisions after the adoption of the antitakeover provisions.

First, *MARKET VALUE OF EQUITY* is included as a control variable, in order to avoid problems in interpreting regression coefficient estimates. For instance, if managers of smaller firms react to antitakeover provisions significantly differently than managers of larger firms (perhaps since larger firms are less likely targets than smaller firms), a correlated variable (such as insider ownership or institutional ownership) may appear significantly related to the subsequent change in long-term investment. If the market value of equity is not included in the regression, such a relationship, if found, could be purely spurious.

Second, the ratio of *BOOK VALUE OF EQUITY/MARKET VALUE OF EQUITY* is included to capture possible effects of varying degrees of book/market ratios (Fama and French, 1993). Firms with high book/market equity behave differently from other firms due to their poor past performance, which also may be correlated with the adoption of an antitakeover provision (Lang, Stulz and Walkling, 1989). The addition of the book/market equity variable is intended to capture these differences among various adopting firms.

Third, a *TAKEOVER INDICATOR*, a dummy control variable, is set equal to 1 if the firm is reported to be a target (or rumored to be a target) in the financial press in the three years prior to the announcement of the antitakeover provision (Brickley, Lease and Smith, 1988; Datta and Iskandar-Datta, 1996; Ryngaert, 1988; Singh and Harianto, 1989b). Meulbroek *et al.* (1990) conjecture that those firms that respond to the threat of a takeover by passing an antitakeover provision are more likely to shift expenditures away from long-term investment in their quest to remain independent. For example, firms may repurchase shares (Bagwell, 1991) or pay specially designated dividends, especially during a recapitalization (Handa and Radhakrishnan, 1991; Willens, 1988), each of which may shift cash flows that would have otherwise gone toward long-term expenditures.

Fourth, a *POISON PILL INDICATOR* is used as a dummy control variable set equal to 1 if the antitakeover provision was a poison pill. Unlike the

other five antitakeover provisions in this paper, the poison pill provision does not require shareholder approval. Walsh and Seward (1990) indicate that: 'Theoretically, actions taken by management that do not require shareholder approval may be particularly damaging to shareholder interests [when compared to actions that require shareholder approval]' (p. 438). This conjecture is economically intuitive given that agency problems are likely to be higher when shareholders are not provided an opportunity to participate in curbing actions that may be detrimental to them.

Finally, two control variables obtained from the IRRC database are used: the number of antitakeover provisions that the firm had adopted previously, before the current provision [*NUMBER PREVIOUSLY ADOPTED*], and the number of provisions adopted with the current provision [*NUMBER CONCURRENTLY ADOPTED*]. It is possible that the effect of antitakeover provision adoption is greater when a firm has several other antitakeover provisions in place. Similarly, multiple antitakeover provisions adopted simultaneously in the same proxy year may have greater impact on a firm's subsequent long-term investment than to those adopted individually (Sundaramurthy, Mahoney and Mahoney, 1997).

METHODOLOGY

This section explains the methodology used to test the effects that antitakeover provisions have on the subsequent long-term investment decisions of firms that adopt them. Three measures of long-term investment are used in this paper: capital expenditures/sales, R&D/sales, and the sum of capital expenditures/sales and R&D/sales. The raw change in each ratio is defined as the difference between the ratio 3 years after the antitakeover provision and the ratio 1 year before the antitakeover provision:

$$\Delta RATIO_i = RATIO_{i,3} - RATIO_{i,-1}$$

where $RATIO_{i,t}$ is the ratio for firm i in year t ($t = -1$ or $t = 3$) and where $t = 0$ corresponds to the year in which the firm adopts the antitakeover provision. Three years after the antitakeover provision initiation are used to allow for long-term effects of the antitakeover provision to influence such 'sticky' items as capital expenditures (Meulbroek *et al.*, 1990). The raw changes in the ratios, however, may

be misleading if industry-wide changes in these ratios occurred. Therefore, these ratios are adjusted by the mean of the changes for firms in the same industry.¹⁰ For the industry adjustment for firm i , the mean ratio at time t of firms in the same industry as firm i is used:

$$\Delta RATIO_i^{\text{ADJUSTED}} = (RATIO_{i,3} - RATIO_{i,-1}) - (\overline{RATIO}_{i,3} - \overline{RATIO}_{i,-1})$$

where $\overline{RATIO}_{i,t}$ represents the mean ratio at time t of firms in the same two-digit SIC code as firm i .¹¹ The average industry-adjusted ratio is then constructed as

$$\overline{\Delta RATIO}^{\text{ADJUSTED}} = \frac{1}{N} \sum_{i=1}^N \Delta RATIO_i^{\text{ADJUSTED}}$$

where N represents the number of firms in our sample. We then regress this average industry-adjusted change in long-term investment on the various firm characteristics that are suggested by agency theory to be important in aligning managerial behavior with shareholder wealth, and include various control variables described above:

ΔLong-term investment

$$\begin{aligned} &= \beta_0 + \beta_1 \text{ OUTSIDER PERCENTAGE} \\ &+ \beta_2 \text{ PRE-CEO OUTSIDER PERCENTAGE} \\ &+ \beta_3 \text{ SEPARATE CEO/CHAIRPERSON} \\ &+ \beta_4 \text{ INSIDER OWNERSHIP} \\ &+ \beta_5 \text{ INSTITUTIONAL OWNERSHIP} \\ &+ \beta_6 \text{ MARKET VALUE OF EQUITY} \\ &+ \beta_7 \text{ BOOK EQUITY/MARKET EQUITY} \\ &+ \beta_8 \text{ TAKEOVER INDICATOR} \\ &+ \beta_9 \text{ POISON PILL INDICATOR} \\ &+ \beta_{10} \text{ NUMBER PREVIOUSLY ADOPTED} \\ &+ \beta_{11} \text{ NUMBER CONCURRENTLY ADOPTED} \end{aligned}$$

THE DATA

This paper's sample, which consists of 261 *Standard and Poor's (S&P)* 500 firms (as of May 1986) that adopted 486 antitakeover provisions for the period 1984–8, is derived from the Investor Responsibility Research Center (IRRC) (Rosenbaum, 1989). In this period, the takeover wave of the 1980s peaked (Davis

and Stout, 1992). The sample begins in 1984 to mark the initial adoption of the poison pill. The accuracy of IRRC's data is high with respect to corporate charter antitakeover provisions (Pound, 1992a, p. 663). The original proxy statements were examined in order to obtain the precise proxy mailing date for the antitakeover amendments. For the poison pill provisions, which have no corresponding proxy statements since shareholder approval is not required, the first public announcement date is taken from *Corporate Control Alert*, a monthly newsletter produced by Am-Law Publishing Corporation reports the date that shareholders were notified that the board decided to adopt a poison pill provision. (This publication is the source for poison pill provisions referenced in Ryngaert, 1988 and Malatesta and Walkling, 1988.)

Insider holdings are found in the proxy statement describing the antitakeover amendment or in the proxy statement before the initiation of the poison pill. The separate CEO/Chairperson status and board composition were also determined by the same proxy statement. Institutional ownership was found using the *Standard and Poor's Stock Guide* in the month-end prior to the antitakeover provision initiation. The *Wall Street Journal* Index was examined for the three years before, the year of, and the three years after the initiation of the antitakeover provision in order to determine whether the firm was the target (or rumored to be the target) of a takeover or merger. The market value of equity is determined using CRSP's shares outstanding and stock price, and book value of equity is taken from Compustat using the (fiscal) year-end prior to the initiation of the antitakeover provision. Industry classifications (SIC codes), sales, research & development expenditures, and capital expenditures are taken from Compustat. The number of observations in the tables of this paper varies slightly depending on data availability.

Table 1 gives the correlation matrix of the independent variables. While there is significant correlation between the control variables and the independent variables suggested by agency theory (outside board composition, fraction of outside board members appointed before the arrival of the current CEO, separate CEO/chairperson indicator, insider ownership and institutional ownership), the only agency theory variable that is significantly correlated with other agency theory variables is the *PRE-CEO OUTSIDER PERCENTAGE*. In order to test the robustness of this paper's results and to ensure that this paper's results are not due to the correlation between the control variables and agency theory

variables, we run the regressions with and without the control variables, and with and without the variable *PRE-CEO OUTSIDER PERCENTAGE*. These robustness tests are particularly important due to recent empirical findings that there are interdependencies among various corporate control mechanisms (Agrawal and Knoeber, 1995; Rediker and Seth, 1995; Sundaramurthy, 1996).

RESULTS

Average Effects on Subsequent Long-term Investment

Table 2 shows the industry-adjusted sample means and their associated *t*-statistics for the two ratios under consideration. Firms that adopt antitakeover provisions decrease significantly both capital expenditure intensity (by one-half of one percent) and R&D intensity (by almost one percent) relative to their industry average after the adoption of antitakeover provisions.¹²

The result of a decrease in research and development supports the findings of Meulbroek *et al.* (1990), but contradicts the findings of Pugh, Page and Jahera (1992), who use a different measure of change in long-term investment. Instead of using the mean *difference* in ratios, Pugh, Page and Jahera (1992) use a mean *percentage* change in the ratios, which is equivalent to weighting the difference in ratios inversely by the beginning ratio. Firms that adopt antitakeover provisions have lower capital expenditure intensity and lower R&D intensity ratios before the takeover defense initiation, therefore potentially biasing the statistical test in favor of the results that Pugh, Page and Jahera (1992) report. In other words, the discovery of a difference in *percentage* changes in long-term investment intensities between the sample and the control may have been an artifact of the differences in original investment intensity levels. The findings of Mallette (1991) of no significant impact of antitakeover provisions on long-term investment may be the result of a different test methodology (non-industry adjusted) and of a smaller sample size, since the period covered in Mallette (1991) is 1983–4, while the current paper covers the period 1984–8.

This empirical test alone tells us very little about the appropriateness of the decline in long-term investment. However, we can use the cross-sectional changes in long-term investment to determine,

Table 1. Means, Standard Deviations, Correlations, $\text{prob} > |R|$ under $H_0: \rho = 0$, and Number of Observations for the Independent Variables for the Model:

$$\Delta \text{Long-term investment} = \beta_0 + \beta_1 \text{ OUTSIDER PERCENTAGE} + \beta_2 \text{ PRE-CEO OUTSIDER PERCENTAGE} \\ + \beta_3 \text{ SEPARATE CEO/CHAIRPERSON} + \beta_4 \text{ INSIDER OWNERSHIP} + \beta_5 \text{ INSTITUTIONAL OWNERSHIP} \\ + \beta_6 \text{ MARKET VALUE OF EQUITY} + \beta_7 \text{ BOOK EQUITY/MARKET EQUITY} \\ + \beta_8 \text{ TAKEOVER INDICATOR} + \beta_9 \text{ POISON PILL INDICATOR} \\ + \beta_{10} \text{ NUMBER PREVIOUSLY ADOPTED} + \beta_{11} \text{ NUMBER CONCURRENTLY ADOPTED}$$

Variable	Mean	Standard deviation	1	2	3	4	5	6	7	8	9	10	11
1. Outsider percentage	0.687	0.142	1.000	-0.362	-0.088	0.011	0.050	-0.141	0.117	0.045	0.110	0.038	-0.097
			0.0	0.001	0.055	0.817	0.274	0.002	0.012	0.322	0.015	0.398	0.033
			486	486	474	483	471	486	466	486	486	486	486
2. Pre-CEO outsider percentage	0.515	0.208		1.000	0.215	0.009	0.008	-0.017	0.015	0.070	0.044	-0.038	-0.047
				0.0	0.001	0.851	0.864	0.708	0.739	0.122	0.329	0.403	0.304
				486	474	483	471	486	466	486	486	486	486
3. Separate CEO/chairperson	0.184	0.388			1.000	0.029	-0.022	-0.052	0.037	-0.044	0.013	-0.053	-0.516
					0.0	0.524	0.641	0.261	0.436	0.341	0.786	0.253	0.263
					474	473	461	474	456	474	474	474	474
4. Insider ownership	3.65	9.46				1.000	0.020	-0.108	-0.108	0.013	0.008	0.052	-0.082
						0.0	0.670	0.018	0.020	0.774	0.860	0.253	0.071
						483	471	483	466	483	483	483	483
5. Institutional ownership	43.32	18.63					1.000	-0.065	0.052	0.006	0.297	0.1375	-0.231
							0.0	0.158	0.268	0.897	0.001	0.003	0.001
							471	471	456	471	471	471	471
6. Market value of equity (mil \$)	3082	3118						1.000	-0.172	-0.109	-0.098	0.007	0.210
								0.0	0.001	0.016	0.031	0.878	0.001
								486	466	486	486	486	486
7. Book equity/market equity	0.703	0.335							1.000	-0.031	0.003	-0.151	0.021
									0.0	0.506	0.944	0.001	0.659
									466	466	466	466	466
8. Takeover indicator	0.135	0.343								1.000	0.201	0.099	-0.020
										0.0	0.001	0.028	0.652
										486	486	486	486
9. Poison pill indicator	0.403	0.491									1.000	0.440	-0.440
											0.0	0.001	0.001
											486	486	486
10. Number previously adopted	0.574	0.853										1.000	-0.367
												0.0	0.001
												486	486
11. Number concurrently adopted	1.568	0.728											1.000
													0.0
													486

Table 2. Changes in Discretionary Expenditures Around the Adoption of an Antitakeover Provision

Discretionary item	Sample size	Mean (%)	<i>t</i> -statistic
Industry-adjusted change in total long-term investment/sales	170	-1.24	-4.15 ^b
Industry-adjusted change in capital expenditure/sales	390	-0.56	-2.50 ^a
Industry-adjusted change in research and development expenditure/sales	175	-0.85	-6.42 ^b

Note: This table presents the mean change in industry-adjusted total long-term investment, capital expenditures, and research and development expenditures from one year before adoption of an antitakeover provision until three years after the adoption.

^a Parameter is significantly different from zero at the 5% level, using a two-tailed test.

^b Parameter is significantly different from zero at the 1% level, using a two-tailed test.

essentially, who cuts long-term investment more and who cuts it less, and interpret the results in light of the predictions from agency theory.

Cross-sectional Regressions on the Change in Long-term Investments: Ownership Matters

Table 3 shows the OLS estimates and *t*-statistics from the regressions of changes in long-term expenditures on the variables suggested by agency theory and the various control variables described above. The regression of change in total long-term investment, as measured by the sum of capital expenditure/sales and R&D/sales, is reported in panel A of Table 3. In addition, long-term investment, as measured by each component of this sum, capital expenditures/sales and R&D/sales, are reported in panels B and C of Table 3, respectively.

In the test of total long-term investment changes, panel A of Table 3 shows that the coefficient on *INSTITUTIONAL OWNERSHIP* enters as positive and significant (*t*-statistic of 2.397), indicating that firms with higher institutional ownership tend to cut long-term investment less than firms with low institutional ownership. This result is consistent with the predictions of agency theory, that firms that are better monitored by large institutional investors behave differently after the adoption of antitakeover provisions. Given our assumption based on agency theory that institutional investors are more effective monitors of management, the lower decrease in long-term investment for firms with higher institutional investment supports the idea that anti-

takeover provisions have negative effects on long-term investment decisions. However, the coefficient on the *INSIDER OWNERSHIP* variable, while positive, is not significant. None of the board composition variables enter the regression as significant.

In addition, two control variables enter the regression as significant. The negative coefficient on the ratio *BOOK EQUITY/MARKET EQUITY* (with a *t*-statistic of -3.289) indicates that firms with high book equity/market equity ratios (and therefore are probably performing poorly due to inefficiency) tend to cut long-term investment more than firms with low book equity/market equity ratios. The negative coefficient on the *TAKEOVER INDICATOR* (with *t*-statistic of -2.512) suggests that those firms with takeover threats or rumors of takeover threats around the adoption of the antitakeover provision tend to cut long-term investment more than those firms without such takeover threats. This empirical finding is consistent with Meulbroek *et al.*'s (1990) conjecture that firms that are under takeover threat continue to feel such pressure and consequently cut long-term investment.

Table 3 also lists the results for the regressions run on the two components of long-term investment. First, panel B of Table 3 shows that, when long-term investment is proxied by capital expenditures/sales, only the coefficient on *NUMBER CONCURRENTLY ADOPTED* enters as significant (with a *t*-statistic of -3.834). The negative coefficient indicates that the larger the number of antitakeover provisions that are adopted at one time, the greater the subsequent fall in capital expenditures to sales. Neither the ownership structure nor board structure variables enter the regression as significant.

Second, panel C of Table 3 shows the results of the regression when long-term expenditures are proxied by research and development to sales. The only coefficient that is significant in this regression is the *INSIDER OWNERSHIP* variable, which is positive (with a *t*-statistic of 2.151).¹³ This regression result indicates that the greater the insider ownership before the antitakeover provision is adopted, the less the firm cuts subsequent long-term investment. The positive sign of the coefficient is consistent with the positive coefficient on the *INSTITUTIONAL OWNERSHIP* variable from the overall regression: Managers in firms that have ownership structures which theoretically align managerial action with shareholder interests decrease subsequent long-term investment less than managers in firms without such

Table 3: Estimated Coefficients and *t*-statistics for the regression:

$$\begin{aligned} \Delta \text{Long-term investment} = & \beta_0 + \beta_1 \text{ OUTSIDER PERCENTAGE} + \beta_2 \text{ PRE-CEO OUTSIDER PERCENTAGE} \\ & + \beta_3 \text{ SEPARATE CEO/CHAIRPERSON} + \beta_4 \text{ INSIDER OWNERSHIP} \\ & + \beta_5 \text{ INSTITUTIONAL OWNERSHIP} \\ & + \beta_6 \text{ MARKET VALUE OF EQUITY} + \beta_7 \text{ BOOK EQUITY/MARKET EQUITY} \\ & + \beta_8 \text{ TAKEOVER INDICATOR} + \beta_9 \text{ POISON PILL INDICATOR} \\ & + \beta_{10} \text{ NUMBER PREVIOUSLY ADOPTED} + \beta_{11} \text{ NUMBER CONCURRENTLY ADOPTED} \end{aligned}$$

Variable	PANEL A Change in total long-term investment/sales (<i>N</i> = 152)		PANEL B Change in capital expenditures/sales (<i>N</i> = 365)		PANEL C Change in research and development/sales (<i>N</i> = 165)	
	Estimated coefficient	<i>t</i> -statistic	Estimated coefficient	<i>t</i> -statistic	Estimated coefficient	<i>t</i> -statistic
0. Intercept	0.0100	0.407	0.3021	1.721 ^a	-0.0034	-0.298
1. Outsider percentage	0.0110	0.498	-0.0294	-1.663	0.0113	1.118
2. Pre-CEO outsider percentage	-0.0007	-0.043	0.0069	0.564	-0.0062	-0.810
3. Separate CEO/Chairperson	-0.0060	-0.737	-0.0001	-0.013	-0.0021	-0.560
4. Insider ownership	0.0006	1.109	-0.0002	-0.793	0.0006	2.151 ^b
5. Institutional ownership	0.0004	2.397 ^b	-0.0001	-0.507	0.0001	0.833
6. Market value of equity (mil \$)	-1.41×10^{-6}	-1.208	4.57×10^{-7}	0.615	-4.96×10^{-7}	-1.020
7. Book equity/market equity	-0.0403	-3.289 ^c	0.0030	0.408	-0.0082	-1.462
8. Takeover indicator	-0.0288	-2.512 ^b	0.0047	0.662	-0.0077	-1.472
9. Poison pill indicator	-0.0101	-1.348	0.0021	0.362	-0.0006	-0.179
10. Number previously adopted	0.0043	1.058	0.0006	0.206	-0.0013	-0.707
11. Number concurrently adopted	-0.0081	-1.522	-0.014	-3.834 ^c	-0.0024	-1.044
Adjusted <i>R</i> ²		0.1453		0.0405		0.0510
<i>F</i> -value		3.348 ^c		2.402 ^c		1.767 ^a

^a Significant at the 10% level, using a two-sided test.

^b Significant at the 5% level, using a two-sided test.

^c Significant at the 1% level, using a two-sided test.

ownership structures. Again, none of the board composition variables is significant.

The three panels of Table 3 show a mixed, but fairly consistent, picture of the effects of the adoption of antitakeover provisions. *An increased economic alignment between management and shareholders leads to a smaller decrease in long-term expenditures following the adoption of an antitakeover provision.* In other words, the increased alignment due to higher insider and institutional ownership leads to a consistent effect of a smaller decrease in long-term investment following the antitakeover provision adoption. Thus, we interpret the decrease in long-term investment subsequent to the adoption of antitakeover provisions as contrary to stockholders' interests.

On the other hand, board composition variables (the fraction of outside members, fraction hired before the CEO took office, and the separate CEO/chairperson indicator) do not enter significantly into *any* of the regressions.¹⁴ Therefore, the *governance variables appear to have an insignificant influence on the long-term investment decisions of management after the adoption of an antitakeover provision.*¹⁵

In summary, greater insider and institutional holdings can significantly mitigate the tendency of firms that are recently protected by antitakeover provisions to decrease subsequent expenditures on long-term investment. However, agency theory does not explain completely why there is a subsequent decrease in average long-term expenditures. One

possible explanation, consistent with our findings, is that pursuing long-term investments requires significant time and resources on the part of management. A warranted interpretation is that management is less likely to expend these resources when it is protected by antitakeover provisions unless there are economic incentives (such as greater insider holdings) or alternate monitoring mechanisms (such as greater institutional holdings).

Robustness Tests

Several tests for robustness are performed. The choice of mean or median for the industry adjustment does not change the qualitative results. An additional concern is that these performance measures are a function of the size of the firm. For instance, if small firms show a systematically different growth rate in these measures, then the use of a mean industry adjustment may bias the conclusions if the size of the firms in the sample is not comparable to the industry average. The analysis was performed using a control group of firms of similar size to firms in the sample (with sales used as a proxy for size), and comparable conclusions were reached. Firms that initiated corporate antitakeover provisions decreased subsequent long-term investment on an industry-adjusted and size-adjusted basis.

In order to test for the robustness of the cross-sectional results, the regressions reported in Table 3 were conducted without the correlated control variables, and the control variables were added one at a time for alternate specifications of the regression. In addition, the regressions are performed with and without each of the correlated independent variables, *OUTSIDER PERCENTAGE* and *PRE-CEO OUTSIDER PERCENTAGE*. These alternate regressions produce similar results, where ownership variables enter as significant in the positive direction, and governance variables do not enter as significant in any of the tests that were performed.¹⁶

DISCUSSION AND CONCLUSIONS

The takeover wave of the 1980s resulted in a large number of intra-industry mergers (e.g. in the oil and airline industries) and had a profound impact on the structure of corporate America (Hatfield, Liebeskind and Opler, 1996; Shleifer and Vishny, 1991). Antitakeover provisions adopted in the 1980s were an adaptive response by managers to cope with this

merger wave. These antitakeover provisions resulted in considerable controversy at the federal, state, and firm level (Berkovitch, Bradley and Khanna, 1989; Jahera and Pugh, 1991). Antitakeover provisions are worthy of continued research attention as the long-run strategic impacts of these antitakeover provisions are still open to debate.

This paper explores the changes in the long-term investment of firms that adopted antitakeover provisions over the period 1984–8. The hypothesis that antitakeover provisions allow managers of protected firms to turn their attention from potential acquirers in order to concentrate on long-term investment is examined. Firms that adopted these antitakeover provisions subsequently reduce long-term expenditures, as measured by capital expenditure and R&D expenditures as a percent of sales.

In addition, this paper is one of the first to explore the cross-sectional variation of changes in long-term expenditures to the adoption of antitakeover provisions. The decline in these expenditures is related to variables posited by agency theory, suggesting that alternate monitoring mechanisms, such as insider holdings and institutional holdings, play key roles in keeping the actions of management aligned with the interests of outside shareholders.

Pound (1992b), reviewing the effects of antitakeover provisions at the state and individual firm level, argues, 'It is widely agreed that the result [of takeover impediments] is the virtual elimination of the so-called "market for corporate control" that defined the corporate governance debate and occupied the focus of much of corporate law during the 1980s.' While the elimination of the takeover market may be an extreme interpretation of the events of the last decade, the rise in antitakeover provisions has undoubtedly raised the transaction costs involved in the takeover arena. Just as the emergence of the tender offer has been linked to changes in the proxy contest rules at the federal and state levels in the 1950s and 1960s (Jarrell and Bradley, 1980; Pound, 1992a), the decline in the tender offers in the late 1980s and early 1990s may be the result of the increase in state, federal, and corporate antitakeover provisions. This increase in antitakeover provisions has most probably encouraged the rise in alternative monitoring mechanisms, particularly the growth in the 'political' mechanisms of shareholder activism (Pound, 1992b), in the past five years. However, since these alternate mechanisms were formerly too expensive to implement when takeovers were easier to accomplish, one might wonder whether the rise in

antitakeover provisions has predominantly shielded the top management of firms from a disciplinary device that is vital and is, at least in some cases, least costly.

Perhaps the most important finding of this paper is that governance actions (in this case, adoptions of antitakeover provisions) impact subsequent strategic long-term investment decisions. The data presented in this paper suggest that antitakeover provisions play a significant role in the subsequent decrease in long-term investment. Furthermore, disciplinary and incentive mechanisms, such as institutional and insider holdings, protect the long-term interest of shareholders by mitigating apparently unwarranted reductions in long-term investment.

APPENDIX: DEFINITIONS OF ANTITAKEOVER PROVISIONS

Supermajority provisions typically increase the shareholder approval requirement for a merger to the 66–80% range, thus superseding the approval requirement of the charter of the state in which the firm is incorporated (Linn and McConnell, 1983). Supermajority requirements may block a bidder from implementing a merger even when the bidder controls the target's board of directors, if the bidder's ownership remains below the specified percentage requirement (McWilliams, 1990). Supermajority provisions raise the cost of a hostile takeover and encourage potential bidders to deal directly with the target firm's board of directors, which typically has the option to waive the provision if a majority of directors approves the merger (a so-called 'board-out provision'). Pure supermajority provisions would seriously limit the management's flexibility in takeover negotiations.

Classified (or staggered) board provisions typically segment the board of directors into three classes of which only one is elected each year (DeAngelo and Rice, 1983; Lauterbach, Malitz and Vu, 1991). With a classified board provision, a new majority shareholder would be forced to wait for two annual meetings before being guaranteed a successful proposal for a merger. Amendments to classify the board are often accompanied by an amendment specifying that supermajority approval by shareholders is required to change the number of directors. This accompanying supermajority provision prevents a bidder from expanding the board and thus controlling the board by electing candidates

to the newly created positions. These proposals often describe the benefits of 'continuity' of board members as the main advantage of classified boards (Mahoney, 1994; Sundaramurthy, 1992; Sundaramurthy, Rechner and Wang, 1996).

Fair-price provisions restrict the transfer of control of a firm if the bidder does not offer a 'fair' price, usually defined as the highest price paid by the bidder for any shares acquired in the target firm during a specified time period or as some premium over the market price (Herzel and Shepro, 1990; Jarrell and Poulsen, 1987). These amendments require supermajority voting approval by shareholders for transfer of control if the fair-price requirement is not met. Fair-price amendments are mainly effective against hostile two-tier tender offers, where the bidding firm offers an attractive price for a fixed percentage of shares with the (stated or implicit) intention of paying a lower price to the minority shareholders if the initial bid is successful. Hostile bidders can avoid the supermajority requirement of the fair-price amendment by making a uniform offer for all outstanding shares at a price at least as great as the 'fair' price, as defined in the amendment.

Reduction in cumulative voting provisions restrict the rights of shareholders to accumulate their votes in support of a particular director or group of directors (Bhagat and Brickley, 1984). With cumulative voting, the number of votes to which a shareholder is entitled is the number of shares owned multiplied by the number of directors to be elected in a given year. Under this structure, it is possible for minority shareholders to elect some board members even if the majority of shareholders opposes their election. A reduction in cumulative voting rights thus reduces the minority's ability to elect their nominees as directors. This change makes the firm a less desirable takeover target, because a bidder is not guaranteed representation on the board of directors, and any subsequent influence or information advantages, if the bid is not successful in obtaining a majority of shares.

Anti-greenmail provisions prohibit the firm's management from paying raiders 'greenmail', which involves the private repurchase of blocks of company stock, usually at a sizeable premium above market price, in exchange for an agreement by the raider not to acquire the firm (Bhagat and Jefferis, 1991; Duggal and Cudd, 1993; Klein and Rosenfeld, 1988; McChesney, 1993). While greenmail is undoubtedly an antitakeover measure, anti-greenmail provisions can also be employed as antitakeover devices. Greenmail can be viewed as payment to bidders for

the transaction costs involved in the administrative, information, search and trading costs involved in the takeover procedure. Eliminating the possibility of this form of payment in cases of failed takeover attempts may discourage potential bidders from considering the firm for a takeover (Mikkelsen and Ruback, 1991). Typical anti-greenmail charter provisions prohibit the firm from repurchasing some or all of the common stock of a shareholder who owns 5% or more of the outstanding common stock and who acquired this ownership within the past three years (Eckbo, 1990). Since anti-greenmail provisions reduce the bidder's ability to appropriate gains in the case of a failed takeover, the provision may reduce the probability of a takeover attempt (Rosenbaum, 1987).

Poison pill provisions are the most recent and perhaps the most controversial of the antitakeover provisions. Poison pill provisions provide target shareholders the right to purchase additional shares at a discount or to sell shares to the target at a premium if certain ownership changes occur, such as the acquisition of a specified percentage of the firm's shares by a bidder considered hostile by current management (Comment and Schwert, 1995; Loh, 1994; MacMinn and Cook, 1991). The target shareholder's right to purchase shares at a discount is known as a 'flip-over plan' (Malatesta and Walkling, 1988). The right to sell shares at a premium is known as a 'back end plan' (Choi, Kamma and Weintrop, 1989; Ryngaert, 1988). The poison pill is considered the most potentially harmful antitakeover measure since shareholder approval is not required to adopt poison pill provisions and management has full discretion in determining when the poison pill provision is applicable (Walsh and Seward, 1990).

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NOTES

1. For the negative shareholder wealth effects of corporate antitakeover amendments, see Achhigbe and

Madura (1996), Bhagat and Brickley (1984), Jarrell and Poulsen (1987), Eckbo (1990), Mahoney and Mahoney (1993), and Mahoney, Sundaramurthy and Mahoney (1996), and for the negative shareholder wealth effects of poison pill provisions, see Malatesta and Walkling (1988), Ryngaert (1988), Choi, Kamma and Weintrop (1989), and Mahoney, Sundaramurthy and Mahoney (1996). Only DeAngelo and Rice (1983) and Linn and McConnell (1983), which study adoptions of antitakeover amendments prior to 1980, find insignificant effects. MacKinlay (1997) provides a review of event study methodology.

2. Meulbroeck *et al.* (1990), using sample data from 1979 to 1985, conclude that R&D intensity declines after an antitakeover provision adoption. Mallette (1991), using sample data from 1983 to 1984, concludes that no significant change in capital expenditure and R&D intensity can be determined after antitakeover provision adoption. Finally, Pugh, Page and Jahera (1992), using sample data over the 1979–85 period, find that capital expenditures and R&D intensity rose significantly after the adoption of an antitakeover provision.
3. Stein (1988) formally develops a model in which management, acting in the best interests of shareholders, is forced to focus on short-term stock price changes (and thus exhibits 'managerial myopia'). In this asymmetric information model, competitors have better information about the value of the firm than shareholders, and will attempt to take the firm over if the share price falls below the 'true' unobservable value of the firm. Without antitakeover provisions in place, the firm managers engage in costly 'signalling' of their true value by forgoing profitable long-term projects in order to raise short-term earnings. With antitakeover provisions in place, takeover threats are reduced (since the acquirer would be forced to deal directly with management in a takeover situation) and managers can concentrate on increasing the amount of profitable, long-term investment.
4. Agency costs in the corporation, as defined by Jensen and Meckling (1976), are the difference between the value of a firm if monitoring of management were costless and the value of the firm as actually operated.
5. In support of this theory, empirical research indicates that stock prices rise with announcements of increased investment expenditures and decline with announcements of reduced investment expenditures (McConnell and Muscarella, 1985; Woolridge and Snow, 1990).
6. In support of this hypothesis, Jensen (1986) for example, notes that mechanisms that tend to decrease discretionary funds of the firm, such as debt and dividends payments, tend to lead to increased share prices, while mechanisms that increase discretionary funds, such as equity issues and decreases in cash dividend payments, lead to decreased share prices.
7. This paper holds that: 'the board of directors should be regarded primarily as a governance structure safeguard between the firm and owners of equity capital, and secondarily as a way by which to safeguard the contractual arrangement between the firm and its management' (Williamson, 1985: 298).

8. Some recent empirical evidence (but by no means all) is consistent with agency theory predictions. Kosnik (1987) finds that outside directors resisted greenmail more effectively. Hermalin and Weisbach (1988) find that firms add outsiders to their board following poor performance. Weisbach (1988) and Warner, Watts and Wruck (1988) find that outside directors are more likely than insider directors to dismiss CEOs following poor economic performance. Kesner and Johnson (1990) discover that boards sued for failing to maintain their fiduciary duty tended to have a low proportion of outside directors. Rosenstein and Wyatt (1990) find a positive stock price reaction at the announcement of the appointment of an additional outside director. Byrd and Hickman (1992) state that in the case of tender offers, better shareholder returns for the acquirer are associated with boards of directors in which at least half the members are independent outside directors. Brickley, Coles and Terry (1994) provide evidence that the enactment of poison pills leads to a positive stock price reaction when the majority of the board consists of outsiders, and a negative stock price reaction when the majority of the board consists of insiders. This evidence suggests that outside directors serve the interests of shareholders.
9. Reputational concerns and fear of lawsuits motivate outside directors to represent shareholders (Fama and Jensen, 1983a,b; Kaplan and Reishaus, 1990). Williamson (1996) does not disagree but submits that: 'outside directors often have stronger incentives to 'go along'' (p. 175), in which case the differential impact of outsiders may be attenuated.
10. The choice of raw changes or industry-adjusted changes makes little difference in the conclusion of overall changes in long-term investment of firms adopting antitakeover provisions, and leads to no change in the sign or significance in the regressions presented below. Results with the (-1, +1) and (-1, +2) windows were equal in sign but insignificant, consistent with the conjecture of 'sticky' long-term investment expenditures.
11. The use of two, three- or four-digit SIC code industries does not significantly alter the results (consistent with Meulbroek et al., 1990; Pugh, Page and Jahera, 1992).
12. The sample size for industry-adjusted change in capital expenditures to sales is 390, while the sample size for industry-adjusted change in research and development expenditures to sales is 175. The large loss in sample size is due to the fact that many firms (such as those in the retail and service sectors) do not have R&D expenditures. This reduction in sample size should not bias the paper's results because our sample contains the whole universe of companies that report research and development expenditures. The interpretation of the results of this paper, therefore, is only relevant to those companies with such long-term investments, which is implicit in our analysis (i.e. we are only studying the effects on long-term investment on those companies that engage in long-term investment). We thank an anonymous reviewer for suggesting that we make this idea clear.
13. Two right-hand side variables were added to the regression to capture possible non-linearities (McConnell and Servaes, 1990; Morck, Shleifer and Vishny, 1988). Along with *INSIDER OWNERSHIP*, we added (*INSIDER OWNERSHIP SQUARED*) and (*LOG OF INSIDER OWNERSHIP*) both individually and together. Neither of these two new variables are significant in the regression, nor does the original (*INSIDER OWNERSHIP*) variable change in significance for the regressions. We thank an anonymous reviewer for suggesting that we test for possible non-linearities.
14. This paper's empirical results are consistent with several papers' findings of no empirical relationship between board composition and strategic action/firm performance (e.g. Baysinger, Kosnik and Turk, 1991; Johnson, Hoskisson and Hitt, 1993; Kesner, Victor and Lamont, 1986; Mallette and Fowler, 1992). These empirical results are consistent with the argument that the strength of commitment of outside directors with shareholder interests is weak (Gordon and Pound, 1993; Mace, 1986; Pfeffer and Salancik, 1978; Williamson, 1975, 1996). This paper's results are also consistent with empirical findings of no relationship between separate CEO/chairperson positions and performance (e.g. Baliga, Moyer and Rao, 1996; Brickley, Coles and Jarrell, 1995; Chaganti, Mahajan and Sharma, 1985; Daily and Dalton, 1992).
15. This paper's results that governance variables have an insignificant impact may not be considered particularly surprising since the corporate board typically does not suggest long-term investment strategies but only ratifies or vetoes management's proposals.
16. The breakdown of firms adopting multiple provisions is as follows: 21 occurrences of firms adopting three provisions simultaneously, 71 occurrences of firms adopting two provisions simultaneously, and 281 occurrences of firms adopting single provisions. If a single firm adopts provisions in different years, each adoption is considered an independent event. The paper's analysis currently provides the results of weighted means and weighted regression analyses, with weights proportional to the number of provisions concurrently adopted (weights equal to 1, 2, or 3), thereby giving a greater weight to those observations with a greater number of provisions adopted. We perform a separate regression analysis on the 281 firms that adopted single provisions. The results of the entire sample are robust to this restriction, with one exception: institutional holdings do not enter as significant in the regression of total long-term investment to sales. The other significant results (the sign and significance of the book-to-market and takeover-indicator variables in the regression of total long-term investment/sales, and the sign and significance of the insider-ownership variable in the regression of research-and-development/sales) are maintained in the restricted regression. We thank an anonymous reviewer for this suggestion.

REFERENCES

- A. Ackhigbe, and J. Madura, (1996). Impact of anti-takeover amendments on corporate performance. *Applied Financial Economics*, **6**, 519–29.
- A. Agrawal, and C. R. Knoeber, (1995). Firm performance and mechanisms to control agency problems between managers and shareholders. Paper presented at the 1995 AFA meeting.
- A. Agrawal, and G. N. Mandelker, (1990). Large shareholders and the monitoring of managers: The case of antitakeover charter amendments. *Journal of Financial and Quantitative Analysis*, **25**, 143–61.
- A. Agrawal, and G. N. Mandelker, (1992). Shark repellents and the role of institutional investors in corporate governance. *Managerial and Decision Economics*, **13**, 15–22.
- F. Allen, (1993). Strategic management and financial markets. *Strategic Management Journal*, **14** (Summer), 11–22.
- M. Aoki, (1984). *The Cooperative Game Theory of the Firm*, New York: Oxford University Press.
- L. S. Bagwell, (1991). Share repurchase and takeover deterrence. *Rand Journal of Economics*, **22**, 72–88.
- B. R. Baliga, R. C. Moyer, and R. S. Rao, (1996). CEO duality and firm performance: What's the fuss? *Strategic Management Journal*, **17**, 41–53.
- B. D. Baysinger, and R. E. Hoskisson, (1990). The composition of boards of directors and strategic control: Effects on corporate strategy. *Academy of Management Review*, **15**, 72–87.
- B. D. Baysinger, R. H. Kosnik, and T. A. Turk, 1991. Effects of board and ownership structure on corporate R&D strategy. *Academy of Management Journal*, **34**, 205–14.
- R. P. Beatty, and E. J. Zajac, (1994). Managerial incentives, monitoring, and risk bearing: A study of executive compensation, ownership, and board structure in initial public offerings. *Administrative Science Quarterly*, **39**, 313–35.
- S. V. Berg, and S. K. Smith, (1978). CEO and board chairman: A quantitative study of dual vs. unitary leadership. *Directors and Boards*, 34–9.
- E. Berkovitch, M. Bradley, and N. Khanna, (1989). Tender offer auctions, resistance strategies, and social welfare. *Journal of Law, Economics, and Organization*, **5**, 395–412.
- S. Bhagat, and J. A. Brickley, (1984). Cumulative voting: The value of minority shareholder voting rights. *Journal of Law and Economics*, **27**, 339–65.
- S. Bhagat, and R. H. Jefferis, (1991). Voting power in the proxy process: The case of antitakeover charter amendments. *Journal of Financial Economics*, **30**, 193–225.
- M. Blair, (1995). *Ownership and Control: Rethinking corporate governance for the twenty-first century*, Washington, DC: Brookings Institution.
- W. Boeker, (1992). Power and managerial dismissal: Scapegoating at the top. *Administrative Science Quarterly*, **37**, 400–21.
- B. K. Boyd, (1995). CEO duality and firm performance: A contingency model. *Strategic Management Journal*, **16**, 301–12.
- J. A. Brickley, J. L. Coles, and G. Jarrell, (1995). Corporate leadership structure: On the separation of the positions of CEO and Chairman of the Board, Working paper, University of Rochester.
- J. A. Brickley, J. L. Coles, and R. L. Terry, (1994). Outside directors and the adoption of poison pills. *Journal of Financial Economics*, **35**, 371–90.
- J. A. Brickley, R. C. Lease, and C. W. Smith, (1988). Ownership structure and voting on antitakeover amendments. *Journal of Financial Economics*, **20**, 267–91.
- J. A. Brickley, R. C. Lease, and C. W. Smith, (1994). Corporate voting: Evidence from charter amendment proposals. *Journal of Corporate Finance*, **1**, 5–31.
- A. K. Buchholtz, and B. A. Ribbens, (1994). Role of chief executive officers in takeover resistance: Effects of CEO incentives and individual characteristics. *Academy of Management Journal*, **37**, 554–79.
- J. W. Byrd, and K. A. Hickman, (1992). Do outside directors monitor managers? Evidence from tender offer bids. *Journal of Financial Economics*, **32**, 195–221.
- R. S. Chaganti, S. Mahajan, and S. Sharma, (1985). Corporate board size, composition and corporate failures in retailing industry. *Journal of Management Studies*, **22**, 400–17.
- D. Choi, S. Kamma, and J. Weintrop, (1989). The Delaware courts, poison pills, and shareholder wealth. *Journal of Law, Economics, and Organization*, **5**, 375–93.
- R. Comment, and G. W. Schwert, (1995). Poison or placebo? Evidence on the deterrence and wealth effects of modern antitakeover measures. *Journal of Financial Economics*, **39**, 3–43.
- C. M. Daily, and D. R. Dalton, (1992). The relationship between governance structure and corporate performance in entrepreneurial firms. *Journal of Corporate Venturing*, **7**, 375–86.
- C. M. Daily, and D. R. Dalton, (1994a). Bankruptcy and corporate governance: The impact of board composition and structure. *Academy of Management Journal*, **37**, 1603–17.
- C. M. Daily, and D. R. Dalton, (1994b). Corporate governance and the bankrupt firm: An empirical assessment. *Strategic Management Journal*, **15**, 643–54.
- S. Datta, and M. Iskandar-Datta, (1996). Takeover defenses and wealth effects on security-holders: The case of poison pill adoptions. *Journal of Banking and Finance*, **20**, 1231–50.
- G. F. Davis, (1991). Agents without principles? The spread of the poison pill through the intercorporate network. *Administrative Science Quarterly*, **36**, 583–613.
- G. F. Davis, and S. K. Stout, (1992). Organization and the market of corporate control: A dynamic analysis of the characteristics of large takeover targets. *Administrative Science Quarterly*, **37**, 605–33.
- H. DeAngelo, and E. M. Rice, (1983). Antitakeover charter amendments and stockholder wealth. *Journal of Financial Economics*, **11**, 329–60.
- H. Demsetz, (1983). The structure of ownership and the theory of the firm. *Journal of Law and Economics*, **26**, 375–90.
- R. Duggal, and M. Cudd, (1993). Successful antitakeover defenses, top management turnover and stock prices. *Managerial and Decision Economics*, **14**, 509–17.

- B. E. Eckbo, (1990). Valuation effects of greenmail prohibitions. *Journal of Financial and Quantitative Analysis*, **25**, 491–505.
- E. F. Fama, and K. R. French, (1993). Common risk factors in the returns on stocks and bonds. *Journal of Financial Economics*, **33**, 3–56.
- E. Fama, and M. C. Jensen, (1983a). Agency problems and the theory of the firm. *Journal of Law and Economics*, **26**, 327–49.
- E. Fama, and M. C. Jensen, (1983b). Separation of ownership and control. *Journal of Law and Economics*, **26**, 301–25.
- S. Finkelstein, and R. A. D'Aveni, (1994). CEO duality as a double-edged sword: How boards of directors balance entrenchment avoidance and unity of command. *Academy of Management Journal*, **37**, 1079–1108.
- P. A. Gibbs, (1993). Determinants of corporate restructuring: The relative importance of corporate governance, takeover threat, and free cash flow. *Strategic Management Journal*, **14** (Summer), 51–68.
- L. A. Gordon, and J. Pound, (1993). Information, ownership structure, and shareholder voting: Evidence from shareholder-sponsored corporate governance proposals. *Journal of Finance*, **48**, 697–718.
- P. Handa, and A. R. Radhakrishnan, (1991). An empirical investigation of leveraged recapitalizations with cash payout as takeover defense. *Financial Management*, **2**, 58–68.
- D. E. Hatfield, J. P. Liebeskind, and T. C. Opler, (1996). The effects of corporate restructuring on aggregate industry specialization. *Strategic Management Journal*, **17**, 55–72.
- B. E. Hermalin, and M. S. Weisbach, (1988). The determinants of board composition. *Rand Journal of Economics*, **19**, 589–606.
- L. Herzel, and R. W. Shepro, (1990). *Bidders and Targets: Mergers and acquisitions in the United States*, Cambridge, MA: Basil Blackwell.
- R. E. Hoskisson, and T. A. Turk, (1990). Corporate restructuring: Governance and control limits of the internal capital market. *Academy of Management Review*, **15**, 459–77.
- J. S. Jahera, and W. Pugh, (1991). State takeover legislation: The case of Delaware. *Journal of Law, Economics, and Organization*, **7**, 410–28.
- G. A. Jarrell, and M. Bradley, (1980). The economic effects of federal and state regulations of cash tender offers. *Journal of Law and Economics*, **23**, 371–408.
- G. A. Jarrell, and A. B. Poulsen, (1987). Shark repellents and stock prices: The effects of antitakeover amendments since 1980. *Journal of Financial Economics*, **19**, 127–68.
- M. C. Jensen, (1986). Agency costs of free cash flow, corporate finance, and takeovers. *American Economic Review*, **76**, 323–29.
- M. C. Jensen, (1993). The modern industrial revolution, exit, and the failure of internal control systems. *Journal of Finance*, **48**, 831–80.
- M. Jensen, and W. Meckling, (1976). Theory of the firm: Managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics*, **3**, 305–360.
- J. L. Johnson, C. M. Daily, and A. E. Ellstrand, (1996). Board of directors: A review and research agenda. *Journal of Management*, **22** (Yearly Review Issue), 409–38.
- R. A. Johnson, R. E. Hoskisson, and M. A. Hitt, (1993). Board of director involvement in restructuring: The effects of board versus managerial controls and characteristics. *Strategic Management Journal*, **14** (Summer), 33–50.
- S. N. Kaplan, and D. Reishaus, (1990). Outside directorships and corporate performance. *Journal of Financial Economics*, **27**, 389–410.
- I. F. Kesner, and R. B. Johnson, (1990). An investigation of the relationship between board composition and stockholder suits. *Strategic Management Journal*, **11**, 327–36.
- I. F. Kesner, B. Victor, and B. T. Lamont, (1986). Board composition and the commission of illegal acts: An investigation of Fortune 500 companies. *Academy of Management Journal*, **29**, 789–99.
- A. Klein, and J. Rosenfeld, (1988). Targeted share repurchases and top management changes. *Journal of Financial Economics*, **20**, 493–506.
- R. Kochar, and D. Parthiban, (1996). Institutional investors and firm innovation: A test of competing hypotheses. *Strategic Management Journal*, **17**, 73–84.
- R. D. Kosnik, (1987). Greenmail: A study of board performance in corporate governance. *Administrative Science Quarterly*, **32**, 163–85.
- R. D. Kosnik, (1990). Effects of board demography and directors' incentives on corporate greenmail decisions. *Academy of Management Journal*, **33**, 129–50.
- L. H. P. Lang, R. M. Stulz, and R. A. Walkling, (1989). Managerial performance, Tobin's q , and the gains from successful tender offers. *Journal of Financial Economics*, **24**, 137–54.
- B. Lauterbach, J. B. Malitz, and J. Vu, (1991). Takeover threats, antitakeover amendments and stock price reaction. *Managerial and Decision Economics*, **12**, 499–510.
- D. Levinthal, (1988). A survey of agency costs of organizations. *Journal of Economic Behavior and Organization*, **9**, 153–85.
- S. C. Linn, and J. J. McConnell, (1983). An empirical investigation of the impact of 'antitakeover' amendments on common stock prices. *Journal of Financial Economics*, **11**, 361–99.
- C. Loh, (1994). The influence of outside directors on the adoption of poison pills. *Quarterly Journal of Business and Economics*, **33**(1), 3–11.
- J. W. Lorsch, and E. MacIver, (1989). *Pawns or Potentates: The reality of America's corporate boards*, Boston, MA: Harvard Business School Press.
- M. L. Mace, [1971] (1986). *Directors: Myth and reality*, Boston: Division of Research, Graduate School of Business, Harvard University.
- A. C. MacKinlay, (1997). Event studies in economics and finance. *Journal of Economic Literature*, **35** (March), 13–39.
- R. D. MacMinn, and D. O. Cook, (1991). An anatomy of the poison pill. *Managerial and Decision Economics*, **12**, 481–87.
- J. M. Mahoney, (1994). *An empirical investigation of the wealth effects, firm performance and managerial decisions of corporate takeover defenses*, unpublished

- doctoral thesis, Wharton School of Business, University of Pennsylvania, Philadelphia, PA.
- J. M. Mahoney, and J. T. Mahoney, (1993). An empirical investigation of the effect of corporate charter antitakeover amendments on stockholder wealth. *Strategic Management Journal*, **14**, 17–31.
- J. M. Mahoney, C. Sundaramurthy, and J. T. Mahoney, (1996). The differential impact on stockholder wealth of various antitakeover provisions. *Managerial and Decision Economics*, **17**, 531–49.
- J. T. Mahoney, (1992). Organizational economics within the conversation of strategic management. In *Advances in Strategic Management*, edited by P. Shrivastava, A. Huff, and J. Dutton, Greenwich, CT: JAI Press, Volume 8, 103–55.
- P. H. Malatesta, and R. A. Walkling, (1988). Poison pill securities: Stockholder wealth, profitability, and ownership structure. *Journal of Financial Economics*, **20**, 347–76.
- A. R. Malekzadeh, and V. B. McWilliams, (1995). Managerial efficiency and share ownership: The market reaction to takeover defenses. *Journal of Applied Business Research*, **11**(4), 48–57.
- P. Mallette, (1991). Antitakeover charter amendments: Impact on determinants of future competitive position. *Journal of Management*, **17**, 769–86.
- P. Mallette, and K. L. Fowler, (1992). Antitakeover charter amendments: Impact on determinants of future competitive position. *Academy of Management Journal*, **35**, 1010–35.
- H. Manne, (1965). Mergers and the market for corporate control. *Journal of Political Economy*, **73**, 110–20.
- F. S. McChesney, (1993). Transaction costs and corporate greenmail: Theory, empirics and a Mickey Mouse case study. *Managerial and Decision Economics*, **14**, 131–50.
- J. J. McConnell, and C. J. Muscarella, (1985). Corporate capital expenditure decisions and the market value of the firm. *Journal of Financial Economics*, **14**, 399–422.
- J. J. McConnell, and H. Servaes, (1990). Additional evidence on equity ownership and corporate value. *Journal of Financial Economics*, **27**, 595–612.
- V. B. McWilliams, (1990). Managerial share ownership and the stock price effects of antitakeover amendment proposals. *Journal of Finance*, **45**, 1627–40.
- L. K. Meulbroeck, M. L. Mitchell, J. H. Mulherin, J. M. Netter, and A. B. Poulsen, (1990). Shark repellents and managerial myopia: An empirical test. *Journal of Political Economy*, **98**, 1108–17.
- W. H. Mikkelsen, and R. S. Ruback, (1991). Targeted repurchases and common stock returns. *Rand Journal of Economics*, **22**, 544–61.
- R. Morck, A. Shleifer, and R. W. Vishny, (1988). Management ownership and market valuation: An empirical analysis. *Journal of Financial Economics*, **20**, 293–315.
- J. A. Pearce, and S. A. Zahra, (1991). The relative power of CEO and board of directors: Associations with corporate performance. *Strategic Management Journal*, **12**, 135–53.
- J. A. Pearce, and S. A. Zahra, (1992). Board composition from a strategic contingency perspective. *Journal of Management Studies*, **29**, 411–38.
- J. Pfeffer, and G. R. Salancik, (1978). *The External Control of Organizations*, New York: Harper and Row.
- L. Pi, and S. G. Timme, (1993). Corporate control and bank efficiency. *Journal of Banking and Finance*, **17**, 515–30.
- J. Pound, (1992a). On the motives for choosing a corporate governance structure: A study of corporate reaction to the Pennsylvania takeover law. *Journal of Law, Economics, and Organization*, **8**, 656–72.
- J. Pound, (1992b). The rise of the political model of corporate governance and corporate control. Working paper, Harvard Business School, September 1992.
- W. N. Pugh, D. E. Page, and J. S. Jahera, Jr (1992). Antitakeover charter amendments: Effects on corporate decisions. *Journal of Financial Research*, **15**, 57–67.
- P. L. Rechner, and D. R. Dalton, (1991). CEO duality and organizational performance: A longitudinal analysis. *Strategic Management Journal*, **12**, 155–60.
- K. J. Rediker, and A. Seth, (1995). Boards of directors and substitution effects of alternative governance mechanisms. *Strategic Management Journal*, **16**, 85–99.
- V. K. Rosenbaum, (1987, 1989). *Takeover Defenses*. Washington DC: Investor Responsibility Research Center, Inc.
- S. Rosenstein, and J. G. Wyatt, (1990). Outside directors, board independence, and shareholder wealth. *Journal of Financial Economics*, **26**, 175–92.
- M. Ryngaert, (1988). The effect of poison pill securities on shareholder wealth. *Journal of Financial Economics*, **20**, 377–417.
- J. K. Seward, and J. P. Walsh, (1996). The governance and control of voluntary corporate spin-offs. *Strategic Management Journal*, **17**, 25–39.
- A. Shleifer, and R. W. Vishny, (1991). Takeovers in the 1960s and the 1980s: Evidence and implications. *Strategic Management Journal*, **12**, 51–9.
- H. Singh, and F. Harianto, (1989a). Management-board relationships, takeover risk and the adoption of golden parachutes. *Academy of Management Journal*, **32**, 7–24.
- H. Singh, and F. Harianto, (1989b). Top management tenure, corporate ownership structure and the magnitude of golden parachutes. *Strategic Management Journal*, **10** (Summer), 143–56.
- J. C. Stein, (1988). Takeover threats and managerial myopia. *Journal of Political Economy*, **96**, 61–80.
- C. Sundaramurthy, (1992). *Corporate governance and strategic action within the context of anti-takeover charter amendments*, unpublished doctoral thesis, University of Illinois at Urbana-Champaign.
- C. Sundaramurthy, (1996). Corporate governance within the context of antitakeover provisions. *Strategic Management Journal*, **17**, 377–94.
- C. Sundaramurthy, J. M. Mahoney, and J. T. Mahoney, (1997). Board structure, antitakeover provisions, and stockholder wealth. *Strategic Management Journal*, **18**, 231–45.
- C. Sundaramurthy, P. Rechner, and W. Wang, (1996). Governance antecedents of board entrenchment: The case of classified board provisions. *Journal of Management*, **22**, 783–99.
- K. Van Nuys, (1993). Corporate governance through the proxy process: Evidence from the 1989 Honeywell proxy

- solicitation. *Journal of Financial Economics*, **34**, 101–32.
- J. Wade, C. A. O'Reilly, and I. Chandratat, (1990). Golden parachutes: CEOs and the exercise of social influence. *Administrative Science Quarterly*, **35**, 587–603.
- J. P. Walsh, and J. K. Seward, (1990). On the efficiency of internal and external corporate control mechanisms. *Academy of Management Review*, **15**, 421–58.
- J. B. Warner, R. L. Watts, and K. H. Wruck, (1988). Stock prices and top management changes. *Journal of Financial Economics*, **20**, 461–92.
- M. S. Weisbach, (1988). Outside directors and CEO turnover. *Journal of Financial Economics*, **20**, 431–60.
- J. Westphal, and E. Zajac, (1994). Substance and symbolism in CEO's long-term incentive plans. *Administrative Science Quarterly*, **39**, 367–90.
- R. Willens, (1988). Dividends as a defense mechanism. *Journal of Taxation of Investments*, **6**, 71–75.
- O. E. Williamson, (1975). *Markets and Hierarchies: Analysis and antitrust implications*, New York: The Free Press.
- O. E. Williamson, (1985). *The Economic Institutions of Capitalism: Firms, markets, relational contracting*, New York: The Free Press.
- O. E. Williamson, (1996). *The Mechanisms of Governance*. New York: Oxford University Press.
- J. R. Woolridge, and C. C. Snow, (1990). Stock market reaction to strategic investment decisions. *Strategic Management Journal*, **11**, 353–64.
- S. A. Zahra, and J. A. Pearce, (1989). Boards of directors and corporate financial performance: A review and integrative model. *Journal of Management*, **15**, 291–334.