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The Nature of Discipline by Corporate Takeovers

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ABSTRACT

This paper provides a comprehensive examination of the disciplinary role of the corporate takeover market using a sample of U.S. target firms over the period 1979 to 1998. The time period spanned allows a broader study not only of the disciplinary role of the takeover market in general, but also of the interaction between the takeover market and alternative governance mechanisms during the 1980s and 1990s. Overall, our evidence is consistent with the view of the corporate takeover market as a "court of last resort," that is, it is an external source of discipline that intercedes when internal control mechanisms are relatively weak or ineffective.

FINANCIAL ECONOMISTS GENERALLY AGREE WITH the proposition that takeovers occur in part to replace managers who are not maximizing shareholder wealth (see, e.g., Jensen (1988), Scharfstein (1988), and Weisbach (1993)). Using a sample of 279 successful corporate takeovers of U.S. targets accomplished through tender offers, this paper provides a comprehensive analysis of the disciplinary role of the takeover market over a recent 20-year period, 1979 to 1998. The distinctive feature of this study is that we explicitly recognize the interaction between the corporate takeover market and alternative control mechanisms while analyzing the impact of the evolving corporate governance environment on the intensity of takeover-related discipline.

In our tests, we distinguish between two equal 10-year periods that largely represent distinct governance regimes: 1979 to 1988 and 1989 to 1998. The earlier period is marked by intense takeover activity, hostility, and less effective internal control mechanisms, while the latter period is characterized by a relatively less active and friendlier takeover market, but with more evolved alternative governance mechanisms.[1] We find significant results along three major lines. First, utilizing both market-based and operating performance measures of performance, we find a (weakly) significant negative relation between the probability of post-takeover CEO turnover and pre-takeover performance.

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[1] Huson et al. (2001) and Holmstrom and Kaplan (2001) observe similar patterns in the evolution of internal and external control mechanisms.

Further, this relation is statistically significant during the earlier sample period, 1979 to 1988, and is insignificant during the latter sample period, 1989 to 1998. These results suggest that the role of the takeover market as a source of performance-related discipline has changed from the 1980s to the 1990s.

Second, our results show that the likelihood of CEO turnover following the takeover is higher if the bid is hostile. On direct examination, however, we find that hostility and pre-takeover performance are not statistically related, indicating that hostile takeovers are not more disciplinary than friendly takeovers with respect to prior performance. Rather, the hostile takeovers in our sample are associated with higher target bid premiums and lower market-to-book ratios than are friendly takeovers, suggesting that the higher post-takeover CEO turnover rates associated with hostile takeovers may arise from disagreements over the bid price and anticipated future performance rather than past performance. At the same time, these effects are also peculiar to the earlier period, 1979 to 1988. During the latter period, we find no significant relation between hostility and either CEO turnover or performance.

Finally, we show that the probability of post-takeover CEO turnover is negatively related to blockholdings and to the proportion of outside board members, suggesting that the takeover market acts as a substitute control mechanism for outside board representation and blockholder ownership. By implication, there is less need for takeover-related discipline to be applied to target firms when a higher level of monitoring is already in place, as indicated by a higher proportion of outside directors and/or greater blockholdings. Once again, we find that the statistical significance of these relations is confined to the earlier period of the sample, 1979 to 1988. These effects vanish during the period 1989 to 1998.

Collectively, our evidence is consistent with the view of Jensen (1986, 1988) that the corporate takeover market acts as a "court of last resort," that is, it is an external source of discipline applied when internal control mechanisms are relatively weak or ineffective. Concurrent with the decline in hostile takeover activity during the period 1989 to 1998 is an increase in the intensity of alternative governance mechanisms. Thus, as internal control mechanisms became more prominent and relatively more effective during the latter years, the takeover market played a reduced role as a source of managerial discipline. At the same time, the increased presence of anti-takeover statutes and corporate takeover defenses may have diminished the relative effectiveness of the takeover market as an alternative source of discipline. Furthermore, the higher incidence of takeover defenses after 1988 may have also reduced the need for target management to employ managerial resistance as a means to achieve a bargaining advantage in takeover contests.

Our study also provides a fresh perspective on how to view the rather sparse and mixed evidence on the disciplinary role of the takeover market. Consistent with performance-related discipline by corporate takeovers, Martin and McConnell (1991) and Kini, Kracaw, and Mian (1995) find a significant negative relation between pre-takeover market-based performance and post-takeover CEO turnover for samples of U.S. targets drawn primarily from the 1960s and

1970s. By contrast, Franks and Mayer (1996) find no such relation using a sample of U.K. firms drawn over the period 1985 to 1986.[2] By taking a more integrative approach that explicitly recognizes the interaction among internal and external governance mechanisms,[3] and by highlighting the evolving disciplinary role of the takeover market in different governance regimes, our paper provides a plausible reconciliation of these apparently conflicting findings.

The remainder of the paper is organized as follows. In Section I, we provide a description of the takeover sample and methodology. Section II examines the relation between top manager turnover with pre-takeover stock price performance, while Section III examines the relation between post-takeover CEO turnover and measures of past operating performance and expected future performance. In Section IV, we report the post-takeover CEO turnover rates for extreme quartiles of performance. In Section V, we study the determinants of the likelihood of post-takeover CEO turnover in a multivariate context. We examine whether hostile takeovers tend to be more disciplinary than friendly takeovers in Section VI. Section VII concludes the paper.

I. Data and Methodology

In this section, we describe the collection of the sample of target firms and the procedures for documenting CEO turnover, both prior to and subsequent to the takeover. In addition, we document several relevant dimensions of the governance environment of the takeover sample, including management reaction to the tender offer, size and composition of the target board of directors, board reputation, ownership concentration, and CEO duality. We also detail our procedures for computing market-based and operating performance measures for the target firms prior to the announcement of the takeover.

A. The Tender Offer Sample

The sample used in this study covers the 20-year period from January 1979 to December 1998. The primary source for identifying individual tender offers over the period 1979 to 1988 is the 14D-1 filing reported in *SEC News Digest*. Over the period 1989 to 1998, the primary source is the Securities Data Corporation's (SDC) Global Mergers and Acquisitions database. This sample contains tender offers in which the target firm was listed on the New York Stock Exchange or the American Stock Exchange and for which the initial announcement date could be identified in the *Wall Street Journal Index* (WSJI) or the Dow Jones Interactive (DJI). We gather additional information regarding the tender offer and the target firm from the WSJI, DJI, SDC Global Mergers and Acquisitions

[2] Although Franks, Mayer, and Renneboog (2001) attribute the divergence in governance outcomes to differences in regulations, these contrasting results may also be due to dissimilar sample periods and prevailing corporate governance regimes in the U.K. and U.S. studies.

[3] Mikkelson and Partch (1997) and Huson et al. (2001) take a similar approach in studying how changes in the more general corporate governance environment affect the intensity of board-related discipline.

database, *Standard and Poor's Security Owner's Stock Guide*, the SEC *Official Summary, Proxy Statements*, and if necessary, the actual articles regarding the tender offer in the *Wall Street Journal*.

The sample is screened to include only successful tender offers for which stock returns data are available for the target firm on the Center for Research in Security Prices (CRSP) monthly tape for the 9 years prior to the year of the first announcement in the takeover contest. We include only tender offers for control of the target firm. We define tender offers for control as those meeting the two conditions: (1) the bidder owns less than 50% of the target firm's shares prior to the tender offer and (2) as the result of the tender offer, the bidder seeks to increase its ownership of the target's shares by at least 15%. In addition, the tender offer has to be successful. We define a successful tender offer as one in which the bidder actually increases its ownership in the target by at least 15% as a result of the tender.[4] Our data-screening criteria are similar to those in Martin and McConnell (1991) and in Kini et al. (1995), with the exception that we require the availability of proxy statements for our sample of tender offer firms. The final sample consists of 279 target firms of successful tender offers announced during the 20-year period from January 1979 to December 1998.

Table I presents the annual distribution of takeover contests and the incidence of hostility in the sample. We classify a takeover as hostile if the target firm's management opposed the initial bid in the takeover contest. The well-known patterns in takeover activity over the past two decades are apparent. Significant tender offer activity occurs during the mid-to-late 1980s, with relatively less activity during the early-to-mid 1990s, followed by an increase in takeover activity toward the end of our sample period. Furthermore, approximately 42% of the takeover contests are hostile over the full sample period, with a generally higher incidence of hostility in the 1980s.[5]

In our subsequent tests, we divide the 20-year sample of tender offer activity into two 10-year subperiods: 1979 to 1988 and 1989 to 1998. This division roughly coincides with two generally accepted governance regimes identified repeatedly in the literature. Comment and Schwert (1995) document a marked increase in the use of anti-takeover statutes or takeover defenses after 1988.

[4] For our sample of 279 target firms, the successful bidder, on average, held 2.78% of the shares of the target firm prior to the tender offer and subsequently acquired an additional 95.69% of the target shares. In other tests, we instituted a more stringent requirement that a bidder is classified as successful if it ends up with at least 50% of the shares of the target firm. This additional requirement reduces our sample size from 279 to 274. We replicate all our tests for this sample of target firms and find qualitatively similar results.

[5] The fraction of our sample events that we classify as hostile is within the broad range of estimates reported by prior studies. Martin and McConnell (1991) classify 50% of their 253 tender offers announced over the 1958 to 1984 period as hostile. For the 705 successful tender offers announced over the period 1976 to 1996 in Schwert's (2000) corporate takeover data set, 16.91, 33.54, 51.77, and 48.79% of the bids are defined as hostile based on WSJ's characterization of the bid, SDC's description of the bid, whether there is an unnegotiated tender offer for control of the target, and whether there is a 13D statement filed in the 12 months prior to the initial bid in which a buyer reveals the intent to seek control of the target, respectively.

Table I

Distribution of 279 Target Firms of Successful Tender Offers Announced between January 1979 and December 1998

The sample contains 279 target firms of successful tender offers for control in which the target firm was listed on the New York Stock Exchange or the American Stock Exchange, the initial announcement date could be identified in the *Wall Street Journal Index* (WSJI) or the Dow Jones Interactive (DJI), and the target had returns data available on the CRSP monthly returns tape. A tender offer for control is defined as one in which the bidder owns less than 50% of the target's shares prior to the offer and plans to increase ownership of the target's shares by at least 15%. The tender offer is successful if in fact the bidder increases ownership by at least 15% as a result of the tender offer. A takeover is classified as hostile if the target firm management opposed the initial bid in the takeover contest.

Year	Target Firms (Percentage of Overall Sample)	Hostility (Percentage of Total for Each Year)
1979	7 (2.51)	2 (28.57)
1980	7 (2.51)	4 (57.14)
1981	9 (3.23)	6 (66.67)
1982	18 (6.45)	9 (50.00)
1983	12 (4.30)	6 (50.00)
1984	24 (8.60)	5 (20.83)
1985	19 (6.81)	9 (47.37)
1986	33 (11.83)	14 (42.42)
1987	22 (7.89)	13 (59.09)
1988	30 (10.75)	19 (63.33)
1989	16 (5.73)	8 (50.00)
1990	8 (2.87)	1 (12.50)
1991	4 (1.43)	1 (25.00)
1992	2 (0.72)	0 (0.00)
1993	7 (2.51)	3 (42.86)
1994	8 (2.87)	5 (62.50)
1995	9 (3.23)	4 (44.44)
1996	10 (3.58)	3 (30.00)
1997	19 (6.81)	5 (26.32)
1998	15 (5.38)	1 (6.67)
Total	279 (100.00)	118 (42.29)

Huson, Parino, and Starks (2001) identify 1989 as the year investor activism became more frequent as well as more focused and sophisticated. Gillan and Starks (2000) report a dramatic increase in the initiation of shareholder proposals related to corporate governance by public funds and shareholder groups over the period 1989 to 1994 relative to the period 1983 to 1988. Huson et al. (2001) and Holmstrom and Kaplan (2001) characterize the 1980s as having intense takeover activity marked by hostility and less effective internal control mechanisms relative to the 1990s. By contrast, a less active and friendlier takeover market, greater shareholder and institutional investor activism, and more evolved internal governance mechanisms characterize the 1990s. Finally, Andrade, Mitchell, and Stafford (2001) argue that deregulation became the dominant factor in explaining merger and acquisition activity after the late

1980s. Distinguishing between these two subperiods allows us to examine the intensity of takeover-related discipline across two distinctly different governance regimes.

B. CEO Turnover, Duality, and Hostility

Table II documents summary statistics on CEO turnover, hostility, and governance characteristics for the 279 target firms. Panel A describes the takeover sample along the dimensions of pre- and post-takeover CEO turnover, CEO duality, and hostility.[6] We identify the top manager of each target firm from the *Standard and Poor's Register of Corporations, Directors, and Executives* (hereafter, *Standard and Poor's Register*) for the end of years −4 through +2 relative to the announcement year of the takeover. For each takeover event, we first determine which of the 279 targets experienced pre-takeover turnover, that is, turnover in the CEO during the 3-year period (year-end −4 to year-end −1) preceding the year of the first announcement of the takeover. We then determine which of the targets experienced post-takeover turnover, that is, turnover in the CEO during the 3-year period from 1 year prior to the year of the takeover announcement to 2 years after the year of the announcement (year end −1 to year end +2). In the event that CEO turnover occurs from year end −1 to year end 0, we check the WSJI/DJI to determine whether the CEO turnover occurs prior to the announcement date of the takeover. If it does, we classify it as pre-takeover CEO turnover; otherwise we identify it as post-takeover CEO turnover.

Panel A of Table II reports a higher average rate of CEO turnover following the takeover than before the takeover: 51% versus 28%. In addition, the rate of CEO turnover, both pre- and post-takeover, has generally increased over time. In the last 10 years of the sample, 36% of the targets experienced CEO turnover in the pre-takeover period, as compared to 24% during the first 10 years of the sample. At the same time, in the last 10 years of the sample period, 60% of the target firms had CEO turnover after the takeover, as compared to 46% during the first 10 years. In each case, the difference in the turnover rates is statistically significant ($p < 0.05$).

Panel A also reports the incidence of CEO duality at the end of the year prior to the year of the announcement. CEO duality refers to the circumstance wherein the CEO simultaneously serves as the chairman of the board of directors. Previous research associates duality with management entrenchment and the lack of board independence (see Jensen (1993)). Our results indicate a significant decrease in the frequency of CEO duality during the 20-year sample

[6] For purposes of brevity, we only report mean values and difference in means tests using the t-test on all these characteristics in Tables II and III. In addition to the statistical comparison of means, we perform a comparison of medians using the Wilcoxon two-sample sign rank test. In almost all cases, significant differences in means were paralleled by similarly significant differences in medians. We do not report these latter tests since they do not alter the interpretation of the results reported in Tables II and III. These results are available upon request from the authors.

Table II

Summary Statistics on CEO Turnover, CEO Duality, Hostility, Board Composition, Board Reputation, and Ownership Structure for 279 Target Firms of Successful Tender Offers over the Period 1979 to 1998

CEO pre-turnover is an indicator variable that is 1 for firms with CEO turnover over the 3-year period (−4 to −1) preceding first announcement of the takeover, and 0 otherwise. CEO post-turnover is an indicator variable, that is, 1 for firms with CEO turnover over the 3-year period (−1 to +2) following the first announcement of the takeover, and is 0 otherwise. CEO duality is an indicator variable that is 1 for firms where the CEO is also the chairman of the board in the year prior to the first announcement of the takeover, and is 0 otherwise. Hostile is an indicator variable that is 1 for firms where the target's management opposed the initial bid in the takeover contest, and 0 otherwise. Outsiders are directors who are not also employees of the firm. Gray directors are outside directors who are former employees or have family or business ties to the firm. The percentage of outsiders (excluding grays) is computed as (outsiders − grays)/(total board size − grays). Reputation is measured as the average number of additional outside directorships, excluding directorships in small local firms and charitable organizations held by board members. The *t*-statistic is reported to test for differences in means between the sample periods 1979 to 1988 and 1989 to 1998.

Variable	Full Sample ($N = 279$) Mean	1979 to 1988 ($N = 181$) Mean	1989 to 1998 ($N = 98$) Mean	*t*-stat
Panel A: Proportion CEO pre-turnover, CEO post-turnover, CEO duality, and deal hostility				
Pre-turnover	0.28	0.24	0.36	2.03**
Post-turnover	0.51	0.46	0.60	2.21**
CEO duality	0.80	0.91	0.58	−6.07***
Hostile	0.42	0.48	0.32	−2.68***
Panel B: Board composition and size				
% Outsiders	0.72	0.73	0.72	−0.62
% Outsiders (excl. grays)	0.67	0.67	0.68	0.25
Number gray directors	1.40	1.67	0.85	−5.03***
Board size	10.31	10.90	9.24	−4.38***
Panel C: Board reputation				
CEO	1.34	1.61	0.81	−3.35***
Outsiders	1.11	1.28	0.78	−4.37***
Insiders	0.59	0.62	0.53	−0.61
Board	1.05	1.19	0.77	−4.17***
Panel D: Percentage ownership				
CEO	3.32	2.97	4.00	0.97
Other directors	7.27	6.81	8.16	0.86
Board	10.59	9.78	12.17	1.21
Blockholders	16.97	13.54	23.70	3.94***
Unaffiliated	13.88	12.18	17.20	2.26**
Affiliated	3.10	1.35	6.50	2.89***

*** indicates $p < 0.01$, and ** indicates $p < 0.05$.

period. During the first 10 years, the percentage of targets with CEO duality is 91%. In the latter 10 years, the percentage of targets with CEO duality is significantly lower at 58% ($p < 0.01$). The general decline in CEO duality here may be attributable to the increased pressure exerted by shareholder activists and regulators previously documented over the time period studied (see Brickley, Coles, and Jarrell (1997) and Goyal and Park (2002)).

The traditional view in the literature is that hostile takeovers tend to be more disciplinary than friendly takeovers (see Morck, Shleifer, and Vishny (1988b)). An alternative viewpoint is that hostility is a bargaining device to obtain a larger fraction of gains from the takeover (see Franks and Mayer (1996) and Schwert (2000)). We detect a significant decrease ($p < 0.01$) in the degree of management resistance to tender offers over the two decades. During the first 10 years of the sample period, 48% of the tender offers were hostile, while during the second 10 years, 32% of the tender offers were hostile. This decline in hostility rates is consistent with the descriptions by Huson et al. (2001) and Holmstrom and Kaplan (2001).

Overall, the results in Panel A demonstrate an increase in the average rate of CEO turnover following takeovers. The increase in post-takeover turnover is concurrent with significant decreases in CEO duality and with a lower proportion of hostile bids.

C. *Board Composition of the Target*

For each target firm, we collect data on the size and composition of the board of directors from the *Standard and Poor's Register* for the year end immediately preceding the announcement year of the takeover. Inside directors (insiders) are defined as board members who are full-time employees of the corporation; outside directors (outsiders) are defined as board members who are not full-time employees. Additionally, outside directors are classified as "gray" directors if their interests appear to align more directly with those of management by way of family relationships, business relationships, or status as former employees of the firm. We use information disclosed in proxy statements to classify outside directors as independent outside directors or gray directors. This procedure results in three categories of directors: inside directors, gray (outside) directors, and independent (outside) directors.

As Panel B of Table II indicates, the average size of the target board is 10.31 directors. We observe a statistically significant ($p < 0.01$) decrease in average board size—from 10.90 board members during the first 10-year period to 9.24 board members during the second 10-year period. The average number of gray directors is 1.40 (13.58% of the board). By comparison, studies by Shivdasani (1993) and Yermack (1996) report that gray directors account for approximately 10% of the board, while studies by Denis and Sarin (1999) and Shivdasani and Yermack (1999) report that affiliated outsiders comprise approximately 20% of the board. Finally, Hermalin and Weisbach (2003) suggest that the consensus proportion of gray directors on corporate boards of U.S. firms is about 10%. Thus, the proportion of gray directors for our sample of target

firms seems representative. Additionally, we observe a statistically significant ($p < 0.01$) decrease in the average number of gray directors between the two 10-year periods (1.67 vs. 0.85).

In terms of board composition, Panel B reports that the average percentage of outsiders on target boards is 72%. The percentage of *independent* directors—computed as the number of outsiders minus grays divided by number of board members minus grays—is 67%.[7] Using either definition of "outside director," we find no significant differences in average board composition across the two decades in the sample period. Thus, while there is a decrease in the average size of target boards during the overall sample period, the composition of the average board does not change toward either a more inside- or outside-dominated structure.

D. Board Member Reputation

We characterize the quality of each target firm's board by using a proxy for the reputation of its directors. Following Shivdasani (1993), we identify the reputation of individual directors as the number of additional board appointments held by a director, excluding directorships in small local firms and charitable organizations. We collect these data from *Standard and Poor's Directory* and from individual target firm proxy statements for the year end prior to the announcement of the takeover. A higher reputation index for the board provides some measures of the stature and experience of the board, as well as their accepted expertise as corporate leaders. A substantial literature exists to support this view. For example, Cotter, Shivdasani, and Zenner (1997) show that shareholders receive larger premiums in tender offers when their directors hold multiple outside directorships. Brown and Maloney (1999) find that bidding firms receive relatively higher returns in acquisitions when their directors hold multiple outside directorships. Alternatively, some evidence suggests that additional directorships held by an individual may mean that he/she has established a reputation for supporting management. Consistent with this view, Core, Holthausen, and Larcker (1999) report that the presence of directors holding multiple directorships is correlated with excessive CEO compensation. Also, there is a popular notion that a higher number of additional directorships may reduce the attention directors are able to give the firm. However, Ferris, Jagannathan, and Pritchard (2003) find no evidence that multiple directorships contribute to inadequate supervision or poor corporate performance. Although some debate continues as to the implications of multiple directorships, we follow the bulk of the evidence by using the average number of multiple directorships as a proxy for board reputation.

Panel C of Table II indicates that the average number of additional directorships held per board member is 1.05. At the same time, the average number held

[7] In essence, this procedure for adjusting for gray directors treats grays as neutral directors. Inasmuch as we cannot determine the sentiments of grays or the degree to which their interests will align with insiders or independent outsiders, we believe this adjustment to be appropriate.

by CEOs is higher than for inside directors (1.34 vs. 0.59). Additionally, outside directors hold more additional directorships, on average, than inside directors (1.11 vs. 0.59).[8] We also find a significant decrease in board reputation over time. For the board as a whole, the average number of additional directorships decreases from 1.19 during the first 10 years of the sample to 0.77 during the second 10 years. This overall decrease appears to arise mainly from significant decreases in the number of directorships held by the CEO (1.61 to 0.81) and by outside directors (1.28 to 0.78).

E. Ownership Structure

We also collect ownership data for each of the target firms. In particular, we collect the proportion of shares held by individual members of the board and the proportion owned by blockholders (unaffiliated and affiliated) from the most recent proxy statement of the target firm prior to the announcement date of the takeover. Panel D of Table II documents summary statistics on the ownership structure of target firms. On average, the board of directors owns 10.59% of the shares of target firms. The CEO accounts for 3.32% of the shares and other directors account for 7.27%. We observe insignificant changes in ownership by the CEO or other board members between the 10-year subperiods. Significant increases occur, however, in ownership by affiliated blockholders (from 1.35 to 6.50%), unaffiliated blockholders (from 12.18 to 17.20%), and all blockholders (from 13.54 to 23.70%). As the literature suggests, this increase in blockholdings may have led to a change in the blockholders' role from relative passivity as shareholders toward increased activism during the latter half of the sample period.

F. Summary Statistics by Post-takeover CEO Turnover

In our next set of tests, we divide the sample of 279 targets into two subsamples. The first subsample includes the 136 targets that have no post-takeover CEO turnover, while the second subsample includes 143 targets in which there is post-takeover CEO turnover. We compare the means of these two subsamples with respect to pre-takeover CEO turnover, CEO duality, hostility, board composition, reputation, and ownership. The results for the full sample period are presented in the first set of three columns in Table III. The second and third sets of columns divide the data once more into takeovers occurring during the first and second 10-year periods of the sample.

Panel A reports comparisons of subsample means with respect to pre-takeover CEO turnover, CEO duality, and hostility. For each sample, we calculate the proportion of targets with pre-takeover turnover in the CEO, CEO

[8] We assume that a director has zero reputation if the director is not listed in the *Standard and Poor's Directory*. We also use an alternative measure of board reputation by averaging the number of additional directorships only over those directors listed in the directory. Our results are not sensitive to these alternative definitions of board reputation.

Table III

Summary Statistics on Pre-takeover CEO Turnover, CEO Duality, Hostility, Board Characteristics, and Ownership Structure, Split by Post-takeover CEO Turnover for 279 Target Firms of Successful Tender Offers over the Period 1979 to 1998

The table presents mean values for target firm governance characteristics. CEO pre-turnover is an indicator variable that is 1 for firms with CEO turnover over the 3-year period (−4 to −1) preceding first announcement of the takeover, and is 0 otherwise. CEO post-turnover is an indicator variable that is 1 for firms with CEO turnover over the 3-year period (−1 to +2) following the first announcement of the takeover, and is 0 otherwise. CEO duality is an indicator variable that is 1 for firms where the CEO is also the chairman of the board in the year prior to the first announcement of the takeover, and is 0 otherwise. Hostile is an indicator variable that is 1 for firms where the target's management opposed the initial bid in the takeover contest, and is 0 otherwise. Outsiders are directors who are not also employees of the firm. Gray directors are outside directors who are former employees or have family or business ties to the firm. The percentage of outsiders (excluding grays) is computed as (outsiders − grays)/(total board size − grays). Reputation is measured as the average number of additional outside directorships held, excluding directorships in small local firms and charitable organizations held by board members. The *t*-statistic is reported to test for differences in means between turnover groups.

	Full Sample ($N = 279$)			1979 to 1988 ($N = 181$)			1989 to 1998 ($N = 98$)		
Variable	No CEO Post-turnover ($N = 136$)	CEO Post-turnover ($N = 143$)	*t*-stat	No CEO Post-turnover ($N = 97$)	CEO Post-turnover ($N = 84$)	*t*-stat	No CEO Post-turnover ($N = 39$)	CEO Post-turnover ($N = 59$)	*t*-stat
Panel A: Proportion pre-turnover, CEO duality, and deal hostility									
CEO Pre-turnover	0.28	0.29	0.13	0.26	0.23	−0.49	0.33	0.37	0.40
CEO duality	0.79	0.80	0.36	0.92	0.90	−0.30	0.46	0.66	1.98**
Hostile	0.35	0.49	2.32**	0.39	0.58	2.61***	0.26	0.36	1.03
Panel B: Board composition and size									
% Outsiders	0.73	0.72	−0.57	0.74	0.71	−1.61	0.70	0.73	1.22
% Outsiders (excl. grays)	0.68	0.66	−1.07	0.69	0.65	−1.69*	0.67	0.68	0.30
Number gray directors	1.41	1.39	−0.07	1.65	1.69	0.19	0.70	0.95	1.06
Board Size	10.15	10.48	0.90	10.72	11.11	0.85	8.72	9.59	1.45

Table III—*Continued*

Variable	Full Sample ($N = 279$)			1979 to 1988 ($N = 181$)			1989 to 1998 ($N = 98$)		
	No CEO Post-turnover ($N = 136$)	CEO Post-turnover ($N = 143$)	t-stat	No CEO Post-turnover ($N = 97$)	CEO Post-turnover ($N = 84$)	t-stat	No CEO Post-turnover ($N = 39$)	CEO Post-turnover ($N = 59$)	t-stat
Panel C: Board reputation									
CEO reputation	1.34	1.33	−0.01	1.53	1.71	0.62	0.83	0.79	−0.10
Outside director reputation	1.11	1.11	−0.08	1.30	1.25	−0.41	0.59	0.90	1.55
Inside director reputation	0.64	0.54	−0.64	0.61	0.64	0.18	0.71	0.41	−1.20
Board reputation	1.06	1.03	−0.27	1.20	1.17	−0.33	0.66	0.84	0.99
Panel D: Percentage ownership									
CEO ownership (%)	4.13	2.58	−1.74*	3.61	2.25	−1.63	5.56	3.07	−1.24
Other directors' ownership (%)	7.08	7.44	0.24	6.72	6.92	0.12	8.09	8.21	0.04
Total board ownership (%)	11.21	10.02	−0.65	10.33	9.17	−0.54	13.65	11.28	−0.69
Blockholders ownership (%)	18.73	15.37	−1.50	16.04	10.72	−2.40**	26.15	22.23	−0.82
Unaffiliated blockholders ownership (%)	14.99	12.87	−1.08	13.99	10.15	−1.81*	17.76	16.86	−0.22
Affiliated blockholders ownership (%)	3.74	2.51	−0.93	2.05	0.57	−1.98**	8.39	5.36	−0.84

*** indicates $p < 0.01$, ** indicates $p < 0.05$, and * indicates $p < 0.10$.

duality, and hostile bids, respectively. We perform a comparison of means test to determine whether or not a significant difference exists between the target samples. As Panel A indicates, the pre-takeover CEO turnover rates remain similar whether or not there is post-takeover CEO turnover. However, we do find a relation between CEO duality and CEO turnover following a takeover—but only during the latter 10-year period of the sample. During the earlier 10 years, duality occurred in slightly more than 90% of the targets, regardless of whether or not there was post-takeover CEO turnover. During the latter period, however, target firms with (without) post-takeover CEO turnover had CEO duality in 66% (46%) of the targets prior to the takeover. The difference between duality rates is statistically significant ($p < 0.05$). The higher frequency of duality associated with post-takeover CEO turnover could reflect the effects of entrenchment. To the extent that duality contributes to the entrenchment of the CEO, corporate takeovers may be necessary to remove inefficient and entrenched management.[9]

We also find that the incidence of hostility is significantly higher when post-takeover turnover in the CEO occurs, but only during the first 10 years of the sample period. More specifically, during the first 10-year period, 58% of the takeovers with post-takeover CEO turnover are hostile, whereas only 39% of the takeovers with no post-takeover turnover are hostile. This result is consistent with the popular notion that hostile takeovers tend to be more disciplinary than friendly takeovers. At the same time, we find that this relation is confined to the 1978 to 1988 subperiod. During 1989 to 1998, there is no significant difference in the frequency of hostility between takeovers with and without post-takeover CEO turnover.

The results on board composition are mixed. As Panel B of Table III shows, there is no significant difference between takeovers with and without post-takeover CEO turnover for the full sample as regards the percentage of outsiders, number of gray directors, or the size of the board. However, during the first 10-year period, we do find that the percentage of outside directors serving on the board is higher ($p < 0.10$) for the sample with no CEO turnover following the takeover than for the sample with CEO turnover (69% vs. 65% excluding grays). While these differences in board composition are small, and confined only to the earlier sample period, they nevertheless constitute evidence consistent with the idea that takeovers and outside directors operate as substitute control mechanisms during the active takeover period 1979 to 1988.

In Panel C of Table III, we find no significant association between any of the board reputation variables and post-takeover CEO turnover for the full sample and either of the two subperiods. Panel D of Table III reports weak evidence that CEO ownership is lower ($p < 0.10$) in targets with versus targets without post-takeover CEO turnover (2.58% vs. 4.13%). This result may indicate that the incentive effect of greater CEO ownership ensures that the firm is run more efficiently, thereby reducing the need for CEO discipline. Alternatively, it may

[9] Consistent with this interpretation, we also find that target firms with CEO duality have, on average, a significantly lower pre-takeover CEO turnover rate than target firms with CEO duality.

also indicate that CEOs are generally more entrenched, or have greater negotiating power over their own fate in the post-takeover reorganization, if they are more influential as owners. Morck, Shleifer, and Vishny (1988a), McConnell and Servaes (1990), and Stulz (1988) enunciate these two opposing effects of higher insider ownership on firm value. We find the same result within each of the 10-year subperiods. However, the difference in CEO ownership between the turnover versus no turnover groups is not statistically significant. Additionally, no significant differences exist in percentage ownership for the turnover versus no turnover groups as regards other members of the board or its factions.

The percentage of blockholders' ownership is significantly greater ($p < 0.05$) for targets having no post-takeover turnover in the CEO for the first 10-year period. For targets with post-takeover CEO turnover, blockholders own an average of 10.72% of outstanding shares. For targets without post-takeover CEO turnover, blockholders hold 16.04% of outstanding shares. Similar results hold for both affiliated and unaffiliated blockholders. Once again, however, this relation is peculiar to the 1979 to 1988 period generally associated with disciplinary takeovers.

Denis, Denis, and Sarin (1997) find that CEO turnover is positively related to the presence of an outside blockholder. Denis and Serrano (1996), in their examination of management turnover following unsuccessful control contests, conclude that outside blockholders facilitate internal control mechanisms. It is noteworthy that both papers derive their sample from the 1980s. It follows that the presence of outside blockholders would reduce the need for disciplinary takeovers at least for the subperiod 1979 to 1988. Therefore, our evidence is consistent with the idea that in the earlier governance environment, blockholder ownership and the corporate takeover market operate as substitute (external) control mechanisms to exert discipline over management.

II. CEO Turnover and Performance: Stock Return Evidence

In this section, we analyze the relation between CEO turnover subsequent to the takeover announcement and performance of the target prior to the takeover announcement. In particular, we conduct univariate tests to determine whether or not post-takeover CEO turnover is statistically related to alternative measures of stock market performance, that is, whether or not the takeover market "disciplines" the CEO for stock price performance.

A. Stock Market-based Measures of Performance

Using CRSP monthly returns data, we calculate cumulative abnormal returns for each of the targets over a period of T months to 3 months prior ($T > 3$) to the month of the first announcement of the takeover. We measure stock price performance up to 3 months prior to the first announcement of the takeover in order to avoid any possible contamination by event-related information. We vary the number of months, T, in our tests in order to produce cumulative

returns over different time periods prior to the takeover. We conduct tests based on cumulative abnormal returns relative to two alternative market benchmarks for assessing stock market performance.

The first set of tests computes size- and MB-adjusted cumulative abnormal returns for each target. We compute abnormal returns as the difference between the monthly return for the target firm and the monthly return on an appropriate size- and MB-matched portfolio. To construct the matched portfolio, we rank all NYSE/AMEX firms on CRSP by firm size in month T-75 and assign them to five size groups. We further rank firms in each of these five size groups according to their market-to-book of equity ratio for month T-75 and then split them into five additional groups. We use month-end prices in T-75 to estimate the market value of equity and data from the closest fiscal year end prior to this month in order to obtain the book value of equity. This procedure results in firms being classified into 25 groups based on their size and market-to-book of equity ratios. We compute equally weighted monthly portfolio returns comprised of all the stocks in each group. Based on the closest match of the size and market-to-book of equity ratio of the target firm, we then designate one of these 25 portfolios as its control portfolio in month T-75, and track the return on the target firm and this control portfolio for the following 12 months. If a stock in the control portfolio ceases to trade, we rebalance the portfolio among the remaining stocks. We follow a similar procedure for control portfolio formation every 12 months. Thus, we constitute the control firms in months T-75 (initial assignment), T-63, T-51, T-39, T-27, and T-15 (final assignment). In order to deal with the new listing bias, we only include stocks in our control portfolios if they are listed on CRSP in month T-75 (see Lyon, Barber, and Tsai (1999)). We define abnormal return for event month T as the difference between the target firm's return minus the return on the size- and MB-matched control portfolio.[10]

Our second set of tests uses the market model to estimate the abnormal returns of target firms during the pre-takeover period. We estimate market model parameters over the period 110 to 51 months prior to the announcement month. The market index used is the CRSP equally weighted market index. Our results are qualitatively similar when we use the CRSP value-weighted market index. Use of the market model benchmark to compute abnormal returns facilitates comparability with existing studies that examine the relation between post-takeover CEO turnover and pre-takeover stock price performance (see, e.g., Martin and McConnell (1991) and Franks and Mayer (1996)).

We calculate the test statistics using a calendar time abnormal returns approach along the lines described by Fama (1998), although it was first used by Jaffe (1974) and Mandelker (1974). Accordingly, we construct portfolio abnormal returns for each calendar month by averaging the abnormal returns for that calendar month of sample firms for which the calendar month falls within

[10] We performed similar tests based on size-adjusted returns. In this case, target firms were matched and compared to one of five control portfolios constructed by firm size. Abnormal target returns were calculated as the difference between monthly returns on the target stock minus average monthly return of the size-matched portfolio. Results using size-adjusted abnormal returns are similar to those using size-and-MB-adjusted abnormal returns across all performance windows.

the event window (event month –T to event month –3) over which we are measuring performance. Thus, for each subsequent calendar month, some firms may enter the portfolio while others leave it. This procedure creates a time series of portfolio abnormal returns in calendar time. We then construct the t-statistic using these calendar month portfolio abnormal returns.[11] Fama and Mitchell and Stafford (2000) argue in favor of this approach, since it accounts for the cross-sectional dependence of abnormal returns.

B. CEO Turnover and Abnormal Stock Returns: Univariate Tests

In this section, we compare the target firms with and without post-takeover CEO turnover with respect to market-related performance during the pre-takeover period, T through 3 months prior to the announcement month. For each of our performance benchmarks, we calculate average cumulative abnormal returns over periods for T equal to 14, 26, 38, and 50 months prior to the announcement month. This procedure produces performance windows of 1 through 4 years. For each performance window, we calculate the average abnormal return for the subsamples with and without post-takeover CEO turnover. We perform a difference of means test to determine if a difference in pre-takeover performance exists between the two samples of targets. This test is conducted using the time-series of calendar month portfolio abnormal returns for the two groups. Table IV reports our results.

Panel A presents our findings using size- and MB-adjusted returns. For the overall sample, the stock price performance for targets with post-takeover CEO turnover is significantly negative for the performance windows, –38 to –3 months ($p < 0.10$), and –26 to –3 months ($p < 0.05$). Furthermore, the stock price performance for targets with post-takeover CEO turnover is lower than that for targets with no post-takeover CEO turnover for all performance windows, but the difference in performance is not significantly different from zero. When the sample is split by decade, however, the disciplinary effect is confined to the earlier subperiod. During the 1979 to 1988 period, lower performance is significantly associated with CEO turnover for the performance window, –14 to –3 months. We find no significant association between pre-takeover performance and post-takeover CEO turnover using takeovers from the period 1989 to 1998.

Panel B reports the results from similar tests using market-model abnormal returns. We find that the stock price performance for targets with post-takeover CEO turnover is significantly negative for the performance window, –26 to –3 months ($p < 0.05$), but is not significantly different from targets with no

[11] In tests not reported in the paper, we address heteroskedasticity by dividing the portfolio abnormal return for each calendar month by its time-series standard deviation computed over the previous 50 calendar months to create its "standardized" portfolio abnormal return. We then construct the t-statistic using these calendar-month-standardized portfolio abnormal returns. A side effect of this correction for heteroskedasticity is that it can yield t-statistics with different signs than the average cumulative abnormal returns. The results using this approach, however, are similar to those reported in the paper without the correction for heteroskedasticity.

Table IV

Pre-takeover Stock Return Performance for 279 Target Firms of Successful Tender Offers over the Period 1979 to 1998

The table reports mean values for size- and MB-adjusted cumulative abnormal returns for the post-takeover CEO turnover and no turnover groups. The size- and MB-adjusted cumulative abnormal returns are computed by cumulating the difference between the monthly returns on the target firm and the monthly returns on an appropriate size- and MB-matched portfolio. The turnover group has CEO turnover over the 3-year period (−1 to +2) following the first announcement of the takeover. The cumulative abnormal returns are computed over months –T to −3 relative to the month of first announcement of a tender offer for the target firm. The market model parameters are estimated over the period −110 to −51 relative to the first tender offer announcement. The market index used is the CRSP equally weighted market index. The *t*-statistics are in parentheses.

	Full Sample			1979 to 1988			1989 to 1998		
Window (Months)	No CEO Post-turnover	CEO Post-turnover	Difference	No CEO Post-turnover	CEO Post-turnover	Difference	No CEO Post-turnover	CEO Post-turnover	Difference
				Panel A: Size- and MB-adjusted cumulative abnormal returns					
−50 to −3	2.77 (−0.46)	−6.84 (−1.47)	−9.61 (−0.71)	6.90 (1.06)	−3.69 (−0.24)	−10.59 (−0.84)	−7.63 (−1.00)	−11.00 (−2.67***)	−3.37 (−0.82)
−38 to −3	2.91 (−0.38)	−5.45 (−1.83*)	−8.36 (−0.88)	5.23 (0.57)	−6.50 (−1.37)	−11.73 (−1.40)	−2.91 (−0.53)	−4.03 (−1.30)	−1.12 (−0.73)
−26 to −3	2.07 (−0.70)	−4.24 (−2.15**)	−6.31 (−0.92)	2.40 (−0.35)	−5.04 (−1.82*)	−7.46 (−1.09)	1.20 (−0.43)	−3.17 (−1.40)	−4.37 (−0.53)
−14 to −3	3.37 (1.08)	−4.08 (−1.11)	−7.45 (−1.55)	3.18 (1.34)	−3.85 (−1.05)	−7.03 (−1.70*)	3.84 (0.58)	−4.39 (−0.75)	−8.23 (−0.94)
				Panel B: Cumulative abnormal returns using market model parameters					
−50 to −3	5.82 (−0.15)	0.01 (−1.29)	−5.81 (−0.79)	6.10 (0.61)	6.56 (−0.04)	0.46 (−0.42)	5.30 (−0.81)	−9.17 (−2.35**)	−14.46 (−0.80)
−38 to −3	6.81 (0.11)	−0.63 (−1.63)	−7.44 (−1.17)	5.84 (0.36)	1.57 (−1.04)	−4.27 (−1.03)	9.41 (−0.10)	−3.74 (−1.32)	−13.16 (−0.70)
−26 to −3	4.88 (−0.29)	−2.41 (−2.25**)	−7.29 (−1.17)	2.77 (−0.71)	−0.33 (−1.58)	−3.10 (−0.60)	10.31 (0.04)	−5.35 (−1.69*)	−15.67 (−1.02)
−14 to −3	4.74 (0.90)	−2.85 (−1.48)	−7.60 (−1.63)	3.65 (0.85)	−0.99 (−1.03)	−4.65 (−1.31)	7.54 (0.66)	−5.49 (−1.16)	−13.03 (−1.25)

*** indicates $p < 0.01$, ** indicates $p < 0.05$, and * indicates $p < 0.10$.

post-takeover turnover. Again, for the performance window, −14 to −3 months, we find that targets with post-takeover CEO turnover underperform the sample with no post-takeover CEO turnover, but that the difference in cumulative abnormal returns is marginally insignificant at the 10% level (t-statistic = 1.63). Within each of the 10-year periods, we find insignificant differences in the cumulative abnormal returns between the two turnover groups.

Overall, our results in Table IV provide modest support for the role of corporate takeovers as a source of discipline based on stock price performance. Using two different performance benchmarks, we find that post-takeover CEO turnover is weakly related to stock price performance prior to the takeover announcement. Moreover, this evidence is largely confined to the earlier subperiod of our sample, 1979 to 1988.

III. CEO Turnover and Performance: Retrospective and Prospective Performance Measurements

In this section, we examine the relation between post-takeover CEO turnover and two performance measurements used elsewhere in the literature: (1) industry-adjusted operating return on assets (IAORA), and (2) market-to-book ratio of assets (MBA). The first is a pure measure of operating performance, providing a *retrospective* measure of performance. By contrast, the market-to-book ratio is commonly interpreted as an index of a firm's future growth opportunities, thus providing a *prospective* performance measurement. Making the distinction between operating and market-based measures of performance is important because market-based performance measures are sensitive to the effect on the stock price of any change in market expectations of future performance over the performance window.

We construct our operating performance measure using data retrieved from COMPUSTAT. We compute operating return on assets (ORA) as operating income before depreciation and taxes (COMPUSTAT data item 13) as a percentage of total assets (COMPUSTAT data item 6). Next, we compute the industry level as the median operating performance for the firm's industry, based on the target firm's four-digit primary SIC code. In the event we find less than three other firms in the industry at the four-digit SIC level, we match at the three-digit SIC level. We compute IAORA as the difference between target operating performance and the industry median level.[12] The MBA is computed as market value of assets (COMPUSTAT data item 24 × data item 25 + data item 9 + data item 34) divided by the book value of assets (data item 60 + data item 9 + data

[12] We repeated our tests using operating cash flow return on assets as a measure of operating performance. We compute operating cash flow return on assets (OCFA) as operating cash flows (OCF) as a percentage of total assets, where OCF is operating income before depreciation and taxes plus decreases in accounts receivable (COMPUSTAT data item 2), plus decreases in inventory (COMPUSTAT data item 3), plus increases in accounts payable (COMPUSTAT data item 70), plus decreases in other current assets (COMPUSTAT data item 68), plus increase in other current liabilities (COMPUSTAT data item 72). All the results using this metric were essentially the same as those using operating return on assets.

item 34). We measure performance for each of the fiscal years (fiscal year ends in the case of the MBA), from 1 year prior through 4 years prior to the year of the first announcement of the takeover (years −1 through −4). We then compute average performance over the intervals −2 through −1, −3 through −1, and −4 through −1.

Using each of these performance measures, we compare median performance levels for targets with and without post-takeover CEO turnover. Table V contains a summary of the results. Panel A of Table V presents the results using IAORA. For the full sample of targets, the difference in median IAORA for targets with and without post-takeover CEO turnover is not statistically significant. During the period 1979 to 1988, the median IAORA for targets with post-takeover CEO turnover is consistently lower than that for targets without post-takeover CEO turnover over all performance intervals studied. The difference, however, is statistically significant only over the 1- and 2-year performance intervals ($p < 0.10$). The difference between median IAORA for targets with and without post-takeover CEO turnover is insignificant during the sample period 1989 to 1998. Therefore, any association between post-takeover CEO turnover and operating performance is confined to the earlier subsample period.

Panel B of Table V presents our results using performance measured by MBA. For the full sample, we find no significant difference between targets with and without post-takeover CEO turnover with respect to MBA over any of the four performance windows. When we separate samples into 10-year intervals, the same result holds for takeovers announced during the period 1989 to 1998. However, for takeovers announced during the period 1979 to 1988, we find that the median MBA for targets with post-takeover CEO turnover is significantly lower than that for targets without post-takeover CEO turnover, but only for the 1-year performance interval ($p < 0.10$). Again, any significant association between post-takeover CEO turnover and performance captured by MBA is limited to the earlier subsample period.

IV. Post-takeover CEO Turnover Rates for Extreme Quartiles of Performance

Table VI provides additional insight into the performance–turnover relation by comparing post-takeover CEO turnover rates in the lowest and highest performance quartiles. These results more clearly highlight the impact and economic significance of the performance–turnover relation identified in the previous tests. In Panel A, we compare post-takeover CEO turnover rates for extreme performance quartiles based on size- and MB-adjusted stock returns averaged over performance windows ranging from 1 to 4 years prior to the year of the takeover. For the full sample of target firms, post-takeover turnover rates are substantially lower (across all performance windows) for takeovers in the highest versus lowest performance quartiles. For example, using the 1-year performance window, the turnover rate for the high-performance quartile is 39.39%, while the turnover rate for the lowest performance quartile is

Table V
Pre-takeover Operating Performance for 279 Target Firms of Successful Tender Offers over the Period 1979 to 1998

The table reports the median levels of industry-adjusted operating return on assets and market-to-book ratios. Operating return on assets (ORA) equals operating income before depreciation and taxes (COMPUSTAT data item 13) as a percentage of total assets (COMPUSTAT data item 6). The industry level is measured as the median operating performance of firms in the same industry (four-digit primary SIC code) as the target firm. Thus, IAORA is the median level of industry-adjusted ORA. The market-to-book (MBA) ratio is computed as market value of assets (COMPUSTAT data item 24 × data item 25 + data item 9 + data item 34) divided by the book value of assets (data item 60 + data item 9 + data item 34). Year −1 is the fiscal year preceding the year of the first announcement of the takeover. The significance tests are based on the Wilcoxon signed rank test.

	Full Sample			1979 to 1988			1989 to 1998		
Window (Months)	No CEO Post-turnover	CEO Post-turnover	Wilcoxon *z*-stat	No CEO Post-turnover	CEO Post-turnover	Wilcoxon *z*-stat	No CEO Post-turnover	CEO Post-turnover	Wilcoxon *z*-stat
Panel A: Industry-adjusted operating return on assets (IAORA)									
Average over years −4 to −1	0.63***	0.44	−1.00	0.86***	0.62	−1.09	−0.14	0.06	0.20
Average over years −3 to −1	0.45**	0.25	−0.93	0.84***	0.25	−1.42	0.16	0.29	0.50
Average over years −2 to −1	0.23**	0.06	−1.18	0.50***	−0.18	−1.84*	0.13	0.32	0.79
Year − 1	0.20**	0.00	−1.19	0.12**	0.00	−1.79*	0.47	0.24	0.31
Panel B: Market-to-book ratio (MBA)									
Average over years −4 to −1	1.13	1.17	0.40	1.11	1.07	−0.96	1.22	1.30	0.98
Average over years −3 to −1	1.15	1.19	0.18	1.12	1.08	−1.20	1.28	1.32	0.95
Average over years −2 to −1	1.14	1.16	−0.27	1.09	1.08	−1.42	1.34	1.26	0.61
Year end −1	1.18	1.13	−0.76	1.10	1.05	−1.88*	1.30	1.25	0.24

*** indicates $p < 0.01$, ** indicates $p < 0.05$, and * indicates $p < 0.10$.

Table VI

Post-takeover Turnover Rates for 279 Target Firms of Successful Tender Offers over 1979 to 1998 for Extreme Performance Quartiles

Table values report the post-takeover CEO turnover rates. The size- and MB-adjusted cumulative abnormal returns are computed by cumulating the difference between the monthly returns on the target firm and the monthly returns on an appropriate size- and MB-matched portfolio. Operating return on assets (ORA) equals operating income before depreciation and taxes (COMPUSTAT data item 13) as a percentage of total assets (COMPUSTAT data item 6). The industry level is measured as the median operating performance of firms in the same industry as the target firm based on four-digit SIC codes. Thus, IAORA is the median level of industry-adjusted ORA. The market-to-book (MBA) ratio is computed as market value of assets (COMPUSTAT data item 24 × data item 25 + data item 9 + data item 34) divided by the book value of assets (data item 60 + data item 9 + data item 34). Quartile 1 (4) represents firms in the top (bottom) performance quartile of the sample. Year −1 is the fiscal year preceding the year of the first announcement of the takeover. For size- and MB-adjusted cumulative abnormal returns, years −4 to −1, years −3 to −1, years −2 to −1, and year −1 correspond to months −50 to −3, −38 to −3, −26 to −3, and −14 to −3 relative to the announcement month of the takeover, respectively. The significance tests are based on the Chi-square test for differences in proportions.

	Full Sample			1979 to 1988			1989 to 1998		
Window (Months)	Quartile 1	Quartile 4	*p*-Value	Quartile 1	Quartile 4	*p*-Value	Quartile 1	Quartile 4	*p*-Value
Panel A: Post-takeover CEO turnover rates using the size- and MB-adjusted cumulative abnormal returns (SMBCAR) as the performance metric									
Average over years −4 to −1	47.76%	60.27%	0.1376	39.53%	60.42%	0.0467**	62.50%	64.00%	0.9133
Average over years −3 to −1	39.39%	63.89%	0.0040***	27.91%	58.33%	0.0035***	52.17%	58.33%	0.6711
Average over years −2 to −1	50.75%	63.01%	0.1429	34.88%	62.50%	0.0085***	69.57%	64.00%	0.6828
Year −1	39.39%	60.27%	0.0139***	30.23%	56.25%	0.0125**	60.87%	68.00%	0.6096
Panel B: Post-takeover CEO turnover rates using the industry-adjusted operating return on assets (IAORA) as the performance metric									
Average over years −4 to −1	44.12%	53.33%	0.2709	36.36%	53.06%	0.1062	66.67%	53.85%	0.3552
Average over years −3 to −1	47.06%	56.58%	0.2536	38.64%	54.00%	0.1363	70.83%	50.00%	0.1330
Average over years −2 to −1	47.76%	61.04%	0.1103	39.53%	59.18%	0.0600*	70.83%	48.15%	0.1004
Year −1	46.97%	56.79%	0.2357	34.88%	63.46%	0.0056***	60.87%	53.57%	0.6005
Panel C: Post-takeover CEO turnover rates using the market-to-book ratio (MBA) as the performance metric									
Average over years −4 to −1	46.38%	51.35%	0.5521	34.09%	53.06%	0.0658*	66.67%	48.00%	0.1869
Average over years −3 to −1	46.27%	50.00%	0.6559	34.88%	53.06%	0.0801*	65.22%	51.85%	0.3399
Average over years −2 to −1	43.28%	52.56%	0.2649	30.23%	54.00%	0.0210***	65.22%	48.15%	0.2256
Year end −1	41.79%	50.00%	0.3201	32.56%	53.85%	0.0376**	56.52%	50.00%	0.6424

*** indicates $p < 0.01$, ** indicates $p < 0.05$, and * indicates $p < 0.10$.

60.27%, a difference of more than 20%. The difference in turnover rates, however, is statistically significant only over the 1- and 3-year performance measurement intervals. Further, we find that the turnover rates are significantly higher in the lowest performance quartile for all performance measurement intervals only over the 1979 to 1988 period, with the difference in turnover rates across performance quartiles ranging from 21 to 30%.

Similar effects are apparent in Panels B and C using IAORA and MBA as performance measures, where again the performance–turnover relation is confined to the earlier sample period. In particular, during the interval 1979 to 1988 and using the 1-year performance window, the rate of CEO turnover is 34.88% for the quartile with the highest average IAORA. For the lowest quartile IAORA, the rate of CEO turnover is nearly twice that at 63.46%. Using average MBA as the benchmark for performance, CEO turnover rates are significantly related to performance only during the 1979 to 1988 period. Across all performance windows, the CEO turnover rate ranges from 30 to 35% in the highest MBA quartile, and ranges from 53 to 54% in the lowest MBA quartile—a difference of 20 to 25%, which is consistently statistically significant.

Taken together, the results presented in Table VI reinforce our findings in Tables IV and V. For the full sample, there is only modest evidence for a statistically and economically significant relation between post-takeover CEO turnover and various measures of pre-takeover target performance. At the same time, our results clearly show evidence of significant discipline applied by the takeover market in the earlier 10-year period of the sample. Collectively, our evidence indicates that the intensity of performance-related discipline exerted by the corporate takeover market has changed significantly over time.

V. CEO Turnover and Performance: Multivariate Tests

In this section we re-examine the relation between CEO turnover and target attributes in a multivariate setting. In particular, we perform logistic regressions to estimate the probability of CEO turnover as a function of the following independent variables: (1) proportion of outside directors on the board, (2) proportion of target shares owned by the CEO and by other directors, (3) percentage of target shares owned by outsiders, (4) percentage of target shares owned by blockholders, (5) reputation index of the board, (6) reaction to the takeover (hostile vs. friendly), and (7) various measures of the pre-takeover performance of the target.

We perform three sets of tests, each using a different measure of pre-takeover performance: size- and MB-adjusted abnormal stock returns (SMBCAR); IAORA; and MBA. Each measure reflects a somewhat different perspective on firm performance. While SMBCAR and MBA are driven by expectations (of future cash flows and growth opportunities) and are forward-looking performance metrics, IAORA reflects historical performance and by nature is a backward-looking measure.

A. Size- and MB-adjusted Returns

Table VII presents the results of our first set of tests. Using SMBCAR as our measure of performance, we estimate the logistic model four times, each time using a different pre-takeover window to compute SMBCAR. To test whether the disciplinary effects of corporate takeovers are sensitive to changes in the governance environment, we include a time dummy and an interaction term that is the product of the time dummy and the performance metric in our logistic regression. The time dummy variable is equal to 0 for takeovers over the period 1979 to 1988, and equal to 1 for takeovers during the period 1989 to 1998. We present these regression results in models 1 through 4. To account for a possible shift in the relation between CEO turnover and other governance characteristics, we estimate the same four regressions again, but with interaction terms between the time dummy and every independent variable. We present these regressions results in models 5 through 8.

Taken together, the results of the two sets of regressions generally support our previous results. Models 1 through 4 indicate that no statistical relation exists between pre-takeover CEO turnover and duality for the full sample. However, in models 5 through 8, while the coefficients on duality itself are insignificant, the coefficients on the interactive time dummy * duality terms are positive and statistically significant ($p < 0.05$), suggesting that the sensitivity of CEO turnover to duality is significantly different over the two time periods. Furthermore, these results indicate that an insignificant (significantly positive) relation exists between the likelihood of CEO turnover and duality for the period 1979 to 1988 (1989 to 1998). The parameter estimates for duality for the latter time period are computed by adding the coefficient on duality to the coefficient on time dummy * duality. We find that these parameter estimates are significant ($p < 0.10$) in models 5 through 8. The significant positive relation for the latter period is consistent with the idea that turnover in top management after a corporate takeover is more likely if entrenchment is more apparent.[13]

The coefficient on proportion of outsiders (excluding grays) is significantly negative ($p < 0.10$) in models 1 through 4, indicating that the probability of post-takeover CEO turnover is higher when the target board is less dominated by independent outside directors.[14] This result is consistent with the idea that targets with outside-dominated boards are more efficiently monitored and therefore less prone to disciplinary takeovers precipitated by the entrenchment of inefficient management. At the same time, the results in the second four-regression models clarify this result in an important way. The coefficients on proportion of outsiders are significantly negative ($p < 0.05$), while those on the time dummy * proportion outsiders are positive but statistically

[13] In our univariate tests, we find that the top manager holds the dual leadership positions of CEO and chairman in 91% (58%) of the target firms in the earlier (latter) time period. A plausible explanation for failing to find a relation for the earlier period (1979 to 1988) is the near absence in cross-sectional variation in CEO duality over this period.

[14] We obtain similar results by using the percentage of outsiders but without making any adjustments for grays.

Table VII

Logistic Models Relating Probability of Post-takeover CEO Turnover to CEO Duality, Board Composition, Ownership, Reputation, Hostility, and Pre-takeover Stock Return Performance for 279 Targets of Successful Tender Offers over the Period 1979 to 1998

The size- and MB-adjusted cumulative abnormal returns (SMBCAR) are computed by cumulating the difference between the monthly returns on the target firm and the monthly returns on an appropriate size- and MB-matched portfolio. Years −4 to −1, years −3 to −1, years −2 to −1, and year −1 correspond to months −50 to −3, −38 to −3, −26 to −3, and −14 to −3 relative to the announcement month of the takeover, respectively. The significance tests are based on the Chi-square test for differences in proportions. Dum is a dummy variable that takes the value 1 if the takeover is in the 1979 to 1988 period, and is 0 otherwise. CEO duality is an indicator variable that is 1 for firms where the CEO is also the chairman of the board in the year prior to the first announcement of the takeover, and is 0 otherwise. The proportion of outsiders (excluding grays) is computed as (outsiders − grays)/(total board size − grays). Outsiders are directors who are not also employees of the firm. Gray directors are outside directors who are former employees or have family or business ties to the firm. Board reputation is measured as the average number of additional outside directorships (excluding directorships in small local firms and charitable organizations) held by board members. Ownership variables include direct as well as indirect ownership. Hostile is an indicator variable that takes a value of 1 if the target management's reaction is hostile to the initial bid in the takeover contest, and is 0 otherwise. The *p*-values are in parentheses.

	Models							
Independent Variables	1	2	3	4	5	6	7	8
Intercept	0.896	0.874	0.876	0.888	2.834**	2.848**	2.830**	2.870**
	(0.30)	(0.31)	(0.31)	(0.30)	(0.02)	(0.02)	(0.02)	(0.02)
Dum	1.143***	1.113***	1.109***	1.102***	(2.519	−2.546	−2.439	−2.631
	(0.00)	(0.00)	(0.00)	(0.00)	(0.18)	(0.17)	(0.19)	(0.15)
Duality	0.313	0.247	0.228	0.270	−0.758	−0.820	−0.837	−0.791
	(0.42)	(0.52)	(0.56)	(0.49)	(0.25)	(0.20)	(0.20)	(0.22)
Dum * Duality					1.692**	1.706**	1.707**	1.706**
					(0.04)	(0.04)	(0.04)	(0.04)
Prop. outsiders (excl. grays)	−2.106**	−1.927*	−1.868*	−1.938*	−3.575**	−3.501**	−3.431**	−3.498**
	(0.05)	(0.06)	(0.07)	(0.06)	(0.01)	(0.02)	(0.02)	(0.02)
Dum * Prop. outsiders					2.940	2.999	2.876	3.032
					(0.19)	(0.17)	(0.19)	(0.16)
CEO ownership	−3.867*	−4.128*	−3.967*	−4.044*	−5.439	−5.780	−5.303	−5.607
	(0.09)	(0.06)	(0.07)	(0.07)	(0.18)	(0.15)	(0.19)	(0.17)
Dum * CEO ownership					2.550	2.540	1.967	2.440
					(0.62)	(0.62)	(0.70)	(0.63)

Other director ownership	−0.250	−0.269	−0.303	−0.182	−0.814	−0.597	−0.559	−0.560
	(0.84)	(0.83)	(0.82)	(0.80)	(0.64)	(0.73)	(0.74)	(0.74)
Dum * Other director own.					1.773	1.305	1.089	1.448
					(0.51)	(0.63)	(0.69)	(0.60)
Blockholder ownership	−1.231	−1.255	−1.289*	−1.331*	−2.096*	−2.210*	−2.288*	−2.289*
	(0.11)	(0.11)	(0.10)	(0.09)	(0.08)	(0.07)	(0.06)	(0.06)
Dum * Blockholder own.					1.890	2.036	2.086	2.059
					(0.25)	(0.22)	(0.20)	(0.21)
Board reputation	0.048	0.041	0.028	0.025	0.169	0.165	0.149	0.139
	(0.80)	(0.83)	(0.88)	(0.90)	(0.50)	(0.51)	(0.55)	(0.58)
Dum * Board reputation					−0.120	−0.109	−0.099	−0.091
					(0.77)	(0.79)	(0.81)	(0.82)
Hostile	0.605**	0.557*	0.529*	0.566*	0.803**	0.802**	0.789**	0.793**
	(0.04)	(0.06)	(0.07)	(0.05)	(0.03)	(0.02)	(0.03)	(0.03)
Dum * Hostile					−0.363	−0.479	−0.504	−0.423
					(0.60)	(0.48)	(0.46)	(0.54)
SMBCAR (−1)	1.197*				−1.154*			
	(0.07)				(0.09)			
Dum * SMBCAR (−1)	0.448				0.465			
	(0.64)				(0.64)			
SMBCAR (−2 to −1)		−0.475				−0.492		
		(0.32)				(0.32)		
Dum * SMBCAR (−2 to −1)		0.460				0.453		
		(0.48)				(0.50)		
SMBCAR (−3 to −1)			−0.603				−0.617	
			(0.13)				(0.13)	
Dum * SMBCAR (−3 to −1)			0.726				0.689	
			(0.20)				(0.24)	
SMBCAR (−4 to −1)				−0.376				−0.378
				(0.26)				(0.27)
Dum * SMBCAR (−4 to −1)				0.239				0.239
				(0.62)				(0.64)
Model Chi-square	25.28***	21.63**	23.13***	22.05**	32.16**	29.21**	30.61**	29.54**
	(0.00)	(0.02)	(0.01)	(0.01)	(0.01)	(0.03)	(0.02)	(0.03)

*** indicates $p < 0.01$, ** indicates $p < 0.05$, and * indicates $p < 0.10$.

insignificant at least at the 10% level. We compute the parameter estimates for proportion outsiders for the latter time period by adding the coefficient on proportion outsiders to the coefficient on time dummy * proportion outsider, and find that they are insignificant in models 5 through 8. Thus, our results indicate that the negative relation between the probability of post-takeover CEO turnover and board composition is concentrated in the 1979 to 1988 period, and is not present in the 1989 to 1998 period.[15]

The coefficient on CEO ownership is also significant and negative in the first four regressions, which implies that the probability of CEO turnover is lower for targets in which the CEO owns a larger fraction of the firm. However, once we incorporate the time dummy * CEO ownership terms in our models, the coefficients on CEO ownership and on the time dummy term become statistically insignificant in models 5 through 8. In addition, we find no relation between post-takeover CEO turnover and the percentage equity ownership of other directors.

The coefficient on percentage of equity ownership by blockholders is negative and significant ($p < 0.10$) in models 3 and 4 of Table VII, indicating that the probability of post-takeover turnover in the CEO is lower for targets with greater percentage ownership by blockholders. These results are consistent with the notion that blockholders are an important source of external monitoring, providing an alternative source of discipline over managers and reducing the need for disciplinary takeovers. In models 5 through 8, the coefficients on blockholder ownership are significantly negative ($p < 0.10$), while the coefficients on the time dummy * blockholder ownership are positive but statistically insignificant. We compute the parameter estimates for blockholder ownership for the latter time period by adding the coefficient on blockholder ownership to the coefficient on time dummy * blockholder ownership. These parameter estimates are insignificant in models 5 through 8. These results indicate that the negative relation between the probability of post-takeover CEO turnover and blockholder ownership is driven by the first 10-year period. Our results also indicate that no significant relation exists between post-takeover CEO turnover and board reputation. This result may not be entirely surprising in light of Hermalin and Weisbach's (2003) argument that the number of additional directorships, in addition to being a measure of quality of board reputation, may also indicate a more pliant and less effective board.

For hostility, the coefficient is positive and significant in regressions 1 through 4, indicating that the probability of turnover in the CEO is higher for hostile versus friendly takeovers. When we include time dummy * hostility

[15] In separate tests, we investigate whether a high proportion of outside directors neutralizes the governance problems of duality. First, we find that the Spearman correlation between duality and the proportion of outside directors is 0.053, 0.060, and 0.071 (all insignificantly different from zero) for the full sample, 1979 to 1988, and 1989 to 1998 periods, respectively. Second, we introduce an interaction term between duality and the proportion of outsiders in our logistic regressions and find that its coefficient is insignificant in all regressions. Thus, it appears that governance problems associated with duality are not mitigated by the presence of a higher fraction of outsiders on the board.

terms (regressions 5 through 8), we find that post-takeover CEO turnover and hostility are statistically related only in the earlier subperiod, 1979 to 1988. Our results for the earlier subperiod stand in contrast to those of Martin and McConnell (1991), who find no difference in post-takeover CEO turnover rates between hostile and friendly targets using a sample drawn predominantly from the 1960s and 1970s.

Our analysis documents a relation between the likelihood of CEO turnover and SMBCAR, but only for the shortest performance window. More specifically, we find the coefficient on SMBCAR is significantly negative ($p < 0.10$) using the nearby performance window (−14 to −3 months). This result indicates that the probability of pre-takeover CEO turnover is inversely related to nearby performance as measured by cumulative size- and MB-adjusted returns.[16] In regression 5, while the coefficient on SMBCAR is again negative and significant ($p < 0.10$), the coefficient on time dummy * SMBCAR in the regression is positive and insignificant. Thus, in the period 1989 to 1998, the coefficient on SMBCAR in regression 5 is −0.689 (−1.154 + 0.465) and is statistically insignificant. As in the univariate analysis, this result provides additional evidence that the disciplinary effects of corporate takeovers are generally confined to the 1979 to 1988 period, and that takeovers during the period 1989 to 1998 occur for reasons other than discipline management for poor performance.

B. Industry-adjusted Operating Return on Assets

In this section, we re-estimate the logistic models presented in Table VII using a measure of operating performance rather than stock market performance. In re-estimating each model, we replace SMBCAR with the IAORA for the target firm over each of the four relevant performance intervals.

Table VIII summarizes the results of logistic regressions with IAORA as the performance measure. In each regression, the results are similar to those in Table VII. Once again, regressions 1 through 4 indicate that, for the full sample, the probability of post-takeover CEO turnover is higher for targets with a lower proportion of outside directors, lower blockholder ownership, lower CEO ownership, and for hostile targets. When we incorporate interactive time dummy terms with all the independent variables in the analysis (results in regressions 5 through 8), we again find that the significance of the relation between the probability of post-takeover CEO turnover and proportion of outsiders, blockholder ownership, and hostility is confined to the sample period 1979 to 1988. In addition, when we include the time dummy terms, the coefficient on CEO ownership is insignificant in both sample subperiods, and there is a positive relation between duality and probability of CEO turnover only in the sample subperiod, 1989 to 1998.

[16] Martin and McConnell (1991) find a negative relation between post-takeover CEO turnover and both market model and industry-adjusted cumulative abnormal stock returns. Kini, Kracaw, and Mian (1995) find similar results using market model cumulative abnormal returns to measure performance.

Table VIII

Logistic Models Relating Probability of Post-takeover CEO Turnover to CEO Duality, Board Composition, Ownership, Reputation, Hostility, and Pre-takeover Operating Performance for 279 Targets of Successful Tender Offers over the Period 1979 to 1998

IAORA is the target firm's industry-adjusted operating return on assets. Dum is an indicator variable that takes the value 1 if the takeover occurs in the 1979 to 1988 period, and is 0 otherwise. CEO duality is an indicator variable that is one for firms where the CEO is also the chairman of the board in the year prior to the first announcement of the takeover, and is 0 otherwise. The proportion of outsiders (excluding grays) is computed as (outsiders − grays)/(total board size − grays). Outsiders are directors who are not also employees of the firm. Gray directors are outside directors who are former employees or have family or business ties to the firm. Board reputation is measured as the average number of additional outside directorships (excluding directorships in small local firms and charitable organizations) held by board members. Hostile is an indicator variable that takes a value of 1 if the target management's reaction is hostile to the initial bid in the takeover contest, and is 0 otherwise. The *p*-values are in parentheses.

	Models							
Independent Variables	1	2	3	4	5	6	7	8
Intercept	1.112	1.340	1.093	1.179	3.430***	3.554***	3.443***	3.562***
	(0.191)	(0.11)	(0.19)	(0.16)	(0.01)	(0.00)	(0.01)	(0.00)
Dum	1.046***	1.030***	1.012***	1.034***	−3.220*	−3.246*	−3.498*	−3.516**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.08)	(0.08)	(0.05)	(0.05)
Duality	0.233	0.193	0.286	0.273	−1.013	−0.929	−0.864	−0.882
	(0.55)	(0.62)	(0.46)	(0.48)	(0.13)	(0.14)	(0.17)	(0.16)
Dum * Duality					1.961**	1.820**	1.857**	1.850**
					(0.02)	(0.02)	(0.02)	(0.02)
Prop. outsiders (excl. grays)	−2.114**	−2.290**	−2.131**	−2.202**	−3.953**	−4.022**	−3.950**	−4.056***
	(0.04)	(0.03)	(0.04)	(0.03)	(0.01)	(0.01)	(0.01)	(0.00)
Dum * Prop. outsiders					3.580*	3.486	3.681*	3.819*
					(0.10)	(0.11)	(0.08)	(0.07)
CEO ownership	−3.996*	−4.153*	−4.088*	−4.303*	−5.380	−5.079	−5.592	−5.864
	(0.07)	(0.06)	(0.07)	(0.05)	(0.22)	(0.24)	(0.19)	(0.17)
Dum * CEO ownership					2.320	1.851	2.612	2.645
					(0.67)	(0.73)	(0.62)	(0.61)
Other director ownership	−0.257	−0.369	−0.161	−0.206	−0.304	−0.787	−0.677	−0.690
	(0.86)	(0.78)	(0.90)	(0.87)	(0.88)	(0.64)	(0.69)	(0.68)

Dum * Other director own.					0.277	1.400	1.620	1.511
					(0.92)	(0.60)	(0.54)	(0.57)
Blockholder ownership	−1.346*	−1.469*	−1.345*	−1.409*	−2.435**	−2.803**	−2.729**	−2.744**
	(0.09)	(0.06)	(0.08)	(0.07)	(0.05)	(0.03)	(0.03)	(0.03)
Dum * Blockholder own.					2.316	2.693	2.767*	2.619
					(0.16)	(0.11)	(0.10)	(0.11)
Board reputation	−0.014	−0.015	−0.001	−0.019	0.064	0.048	0.059	0.049
	(0.94)	(0.94)	(0.99)	(0.92)	(0.80)	(0.85)	(0.81)	(0.85)
Dum * Board reputation					0.027	0.032	0.025	−0.041
					(0.95)	(0.94)	(0.95)	(0.92)
Hostile	0.674**	0.644**	0.648**	0.666**	1.028***	0.959***	0.925***	0.916**
	(0.02)	(0.03)	(0.03)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)
Dum * Hostile					−0.776	−0.634	−0.518	−0.381
					(0.26)	(0.35)	(0.45)	(0.57)
IAORA (−1)	−5.133**				−6.266**			
	(0.05)				(0.02)			
Dum * IAORA (−1)	5.994				7.618*			
	(0.11)				(0.06)			
IAORA (−2 to −1)		−5.232**				−6.446**		
		(0.04)				(0.02)		
Dum * IAORA (−2 to −1)		6.042				7.420		
		(0.15)				(0.10)		
IAORA (−3 to −1)			−4.323				−5.566*	
			(0.10)				(0.05)	
Dum * IAORA (−3 to −1)			4.372				5.610	
			(0.83)				(0.24)	
IAORA (−4 to −1)				−4.228				−5.610*
				(0.13)				(0.06)
Dum * IAORA (−4 to −1)				3.406				4.392
				(0.46)				(0.37)
Model Chi-square	29.91***	27.75***	24.80***	26.27***	37.92***	37.84***	35.70***	36.92***
	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)

*** indicates $p < 0.01$, ** indicates $p < 0.05$, and * indicates $p < 0.10$.

The results in Table VIII also show an inverse relation between the probability of post-takeover CEO turnover and IAORA. In particular, across all regressions, the coefficient on IAORA is negative and generally significant using all four-performance intervals. The coefficient on the dummy * IAORA variable is positive and has a magnitude similar to the coefficient on IAORA. As a result, the coefficient on IAORA for the period 1989 to 1998 in all these models is insignificant. These results indicate that the negative relation between pre-takeover CEO turnover and operating performance is strongest in the period 1979 to 1988.

C. Market-to-Book Ratio

In our final set of tests, we repeat our regressions using the MBA as an alternative measure of performance. This performance measure is often considered a metric of future growth opportunities and thus provides a forward-looking index of performance. We present these results in Table IX. Once more, the results are generally similar to those documented in Tables VII and VIII. Lower proportion of outsiders, lower blockholder ownership, and hostility are all associated with a higher probability of post-takeover CEO turnover. Again, we find these effects to be concentrated in the 1979 to 1988 subperiod of the sample.

Across all regressions specified in Table IX, we find a significant negative relation between the probability of post-takeover CEO turnover and pre-takeover MBA. The coefficients on the dummy * MBA variable are significantly positive at the 10% level in five of the eight regression models, and also are similar in magnitudes to their corresponding coefficient on MBA. Thus, in all these models, the estimated coefficients on MBA for the period 1989 to 1998 are insignificantly different from zero. These results indicate that the negative relation between pre-takeover CEO turnover and MBA is strongest in the period 1979 to 1988. Thus, regardless of the performance metric (operating or market-based), any evidence of post-takeover discipline of the CEO for performance-related reasons appears to be limited to the earlier period, 1979 to 1988.

D. Implied Probabilities

We compute the implied probabilities of post-takeover CEO turnover by subperiod to assess the economic significance of the coefficients estimated in models 5 through 8 of Tables VII, VIII, and IX. In Table X, we report these probabilities for all our performance metrics and performance measurement windows evaluated at the median level for each extreme quartile of performance.[17] Panels A, B, and C present the sensitivity of implied probabilities to SMBCAR, IAORA,

[17] In assessing these implied probabilities, all the nonperformance variables are held constant at their mean values. We also replicate this analysis for models 1 through 4 in Tables VII, VIII, and IX, and the results pertaining to performance levels yield differences in the likelihood of post-takeover CEO turnover across performance quartiles similar to those reported in Table X.

Table IX

Logistic Models Relating Probability of Post-takeover CEO Turnover to CEO Duality, Board Composition, Ownership, Reputation, Hostility, and Market-to-Book (MBA) Ratio for 279 Targets of Successful Tender Offers over the Period 1979 to 1998

MBA is the target firm's market-to-book ratio of assets. Dum is an indicator variable that takes the value one if the takeover is in the 1979 to 1988 period, and is 0 otherwise. CEO duality is an indicator variable that is 1 for firms where the CEO is also the chairman of the board in the year prior to the first announcement of the takeover, and is 0 otherwise. The proportion outsiders (excluding grays) is computed as (outsiders − grays)/(total board size − grays). Outsiders are directors who are not also employees of the firm. Gray directors are outside directors who are former employees or have family or business ties to the firm. Board reputation is measured as the average number of additional outside directorships (excluding directorships in small local firms and charitable organizations) held by board members. Hostile is an indicator variable that takes a value of 1 if the target management's reaction is hostile to the initial bid in the takeover contest, and is 0 otherwise. The *p*-values are in parentheses.

	Models							
Independent Variables	1	2	3	4	5	6	7	8
Intercept	2.413**	2.397**	2.084**	2.042**	4.429***	4.401***	4.367***	4.366***
	(0.02)	(0.02)	(0.04)	(0.05)	(0.00)	(0.00)	(0.00)	(0.00)
Dum	0.124	0.277	0.094	0.136	−4.041**	−3.941**	−4.470**	−4.409**
	(0.86)	(0.70)	(0.90)	(0.85)	(0.04)	(0.05)	(0.02)	(0.02)
Duality	0.271	0.199	0.276	0.303	−0.634	−0.639	−0.645	−0.652
	(0.49)	(0.60)	(0.47)	(0.42)	(0.33)	(0.30)	(0.29)	(0.28)
Dum * Duality					1.503*	1.449*	1.545**	1.540**
					(0.07)	(0.07)	(0.05)	(0.05)
Prop. outsiders (excl. grays)	−2.256**	−2.365**	−2.225**	−2.328**	−4.027**	−4.034**	−4.062**	−4.178***
	(0.03)	(0.02)	(0.03)	(0.02)	(0.01)	(0.01)	(0.01)	(0.00)
Dum * Prop. outsiders					3.758*	3.585*	3.850*	3.925*
					(0.09)	(0.10)	(0.07)	(0.07)
CEO ownership	−4.723**	−4.716**	−4.366*	−4.445**	−6.902	−6.283	−6.279	−6.533
	(0.04)	(0.04)	(0.05)	(0.05)	(0.12)	(0.14)	(0.15)	(0.13)
Dum * CEO ownership					3.491	2.791	3.284	3.575
					(0.52)	(0.60)	(0.53)	(0.50)
Other director ownership	0.014	−0.594	−0.418	−0.395	0.207	−0.908	−0.943	−0.926
	(0.99)	(0.64)	(0.74)	(0.76)	(0.92)	(0.60)	(0.58)	(0.59)
Dum * Other director own.					0.266	1.384	1.830	1.798
					(0.93)	(0.61)	(0.49)	(0.50)

Table IX—*Continued*

Independent Variables	Models							
	1	2	3	4	5	6	7	8
Blockholder ownership	−1.420*	−1.510*	−1.381*	−1.431*	−2.474**	−2.749**	−2.701**	−2.685**
	(0.07)	(0.05)	(0.08)	(0.06)	(0.04)	(0.03)	(0.03)	(0.03)
Dum * Blockholder own.					2.271	2.568	2.686	2.506
					(0.17)	(0.12)	(0.10)	(0.13)
Board reputation	−0.080	−0.069	−0.051	−0.035	0.019	0.012	0.026	0.028
	(0.67)	(0.72)	(0.79)	(0.85)	(0.94)	(0.96)	(0.95)	(0.94)
Dum * Board reputation					−0.044	−0.021	0.026	0.028
					(0.92)	(0.96)	(0.95)	(0.94)
Hostile	0.592*	0.618**	0.620**	0.607**	0.808**	0.821**	0.826**	0.842**
	(0.05)	(0.04)	(0.03)	(0.04)	(0.03)	(0.02)	(0.02)	(0.02)
Dum * Hostile					−0.381	−0.352	−0.359	−0.420
					(0.59)	(0.61)	(0.60)	(0.53)
MBA (−1)	−0.960**				−0.983**			
	(0.02)				(0.02)			
Dum * MBA (−1)	0.874*				0.921*			
	(0.06)				(0.06)			
MBA (−2 to −1)		−0.816*				−0.883**		
		(0.05)				(0.04)		
Dum * MBA (−2 to −1)		0.731				0.835		
		(0.13)				(0.10)		
MBA (−3 to −1)			−0.741*				−0.840*	
			(0.07)				(0.05)	
Dum * MBA (−3 to −1)			0.815*				0.921*	
			(0.10)				(0.08)	
MBA (−4 to −1)				−0.682*				−0.790*
				(0.10)				(0.07)
Dum * MBA (−4 to −1)				0.782				0.879*
				(0.11)				(0.09)
Model Chi-square	29.02***	26.60***	25.76***	26.24***	37.28***	35.50***	35.11***	35.79***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)

*** indicates $p < 0.01$, ** indicates $p < 0.05$, and * indicates $p < 0.10$.

Table X

Implied Probabilities of Post-takeover CEO Turnover across Performance Quartiles by Subperiod

The table reports implied probabilities of post-takeover CEO turnover by subperiod for models 5 through 8 in Tables VII, VIII, and IX, respectively. The median performance level in each extreme performance quartile and the mean values for all the governance variables are used to estimate implied probabilities. The size- and MB-adjusted cumulative abnormal returns are computed by cumulating the difference between the monthly returns on the target firm and the monthly returns on an appropriate size- and MB-matched portfolio. Operating return on assets (ORA) equals operating income before depreciation and taxes (COMPUSTAT data item 13) as a percentage of total assets (COMPUSTAT data item 6). The industry level is measured as the median operating performance of firms in the same industry as the target firm based on four-digit SIC codes. Thus, IAORA is the median level of industry-adjusted ORA. The market-to-book (MBA) ratio is computed as market value of assets (COMPUSTAT data item 24 × data item 25 + data item 9 + data item 34) divided by the book value of assets (data item 60 + data item 9 + data item 34). Quartile 1 (4) represents the top (bottom) performance quartile of the sample. Year −1 is the fiscal year preceding the year of the first announcement of the takeover. For size- and MB-adjusted cumulative abnormal returns, years −4 to −1, years −3 to −1, years −2 to −1, and year −1 correspond to months −50 to −3, −38 to −3, −26 to −3, and −14 to −3 relative to the announcement month of the takeover, respectively.

					Implied Probability of Post-takeover CEO Turnover (%)							
	Median Performance Level (%)				1979 to 1988				1989 to 1998			
Performance Quartile	Year −1	Years −2 to −1	Years −3 to −1	Years −4 to −1	Year −1	Years −2 to −1	Years −3 to −1	Years −4 to −1	Year −1	Years −2 to −1	Years −3 to −1	Years −4 to −1
Panel A: Size- and MB-adjusted cumulative abnormal returns (SMBCAR)												
Quartile 1	33.20	43.52	51.25	53.93	34.72	38.51	36.08	39.02	64.18	68.27	69.38	67.04
Quartile 4	−29.02	−44.35	−52.53	−58.62	52.16	49.11	51.71	49.47	73.34	69.01	67.77	70.40
Difference (4 − 1)	−62.22	−87.87	−103.78	−112.55	17.44	10.60	15.63	10.45	9.16	0.74	−1.61	3.36
Panel B: Industry-adjusted operating return on assets (IAORA)												
Quartile 1	8.42	8.63	8.07	8.35	33.81	33.44	35.64	35.34	71.30	70.78	68.95	67.36
Quartile 4	−7.15	−5.67	−5.15	−5.30	57.54	55.80	53.60	54.03	66.81	67.82	68.83	70.91
Difference (4 − 1)	−15.57	−14.30	−13.22	−13.65	23.73	23.36	17.96	18.69	−4.49	−2.96	−0.12	3.55
Panel C: Market-to-book ratio (MBA)												
Quartile 1	1.81	1.82	1.75	1.76	30.34	30.85	33.21	33.21	69.65	68.89	69.63	69.53
Quartile 4	0.85	0.85	0.82	0.83	52.89	51.38	51.90	50.90	70.89	69.89	68.03	67.75
Difference (4 − 1)	−0.96	−0.97	−0.93	−0.93	22.55	20.52	18.69	17.69	1.25	1.00	−1.60	−1.78

and the MBA, respectively. Within each panel, the first set of four columns presents the median performance levels of each extreme quartile for our four performance measurement windows. For each of these windows, the next two sets of four columns present the implied probabilities of post-takeover CEO turnover for the periods 1979 to 1988 and 1989 to 1998, respectively.

In Panel A of Table X, the median level of SMBCAR for the best performing quartile (Quartile 1) is 33.20%, while the median level of SMBCAR for the worst performing quartile (Quartile 4) is −29.02%, each evaluated over the performance window year −1 (months −14 to −3). For the subperiod 1979 to 1988, the implied probability of post-takeover CEO turnover evaluated at the median level of SMBCAR in each extreme quartile is 34.72% for the highest performance quartile and 52.16% for the lowest performance quartile. These results indicate that if the performance level changes from the best to the worst quartile of SMBCAR, the probability of post-takeover CEO turnover increases by 17.44%. For the subperiod 1989 to 1998, the implied probability of post-takeover CEO turnover is 64.18 and 73.34% for the best and worst performing SMBCAR quartiles, respectively. Thus, while the probability of post-takeover CEO turnover is higher during the subperiod 1989 to 1998, the difference in the probability across extreme quartiles of SMBCAR is much lower at 9.16%. In fact, we see that the difference between implied probabilities across extreme quartiles of performance for any performance measurement window is consistently considerably lower for the subperiod 1989 to 1998.

In Panels B and C of Table X, we report the sensitivity of implied probabilities of post-takeover CEO turnover to changes in IAORA and MBA, respectively. In these two panels, we observe that the differences in implied probabilities across extreme quartiles of performance are, once again, strikingly higher for the earlier subperiod, but relatively similar for the latter subperiod. In particular, the difference in implied probabilities across extreme IAORA quartiles ranges from 17.96 to 23.73% and −0.12 to 3.55% for the subperiods 1979 to 1988 and 1989 to 1998, respectively. Similarly, the difference in implied probabilities across extreme MBA quartiles ranges from 17.69 to 22.55% for the subperiod 1979 to 1998 and ranges from −1.78 to 1.25% for the subperiod 1989 to 1998. Overall, these results highlight the significant sensitivity of post-takeover CEO turnover to pre-takeover performance over the 1979 to 1988 period, and the lack thereof in the 1989 to 1998 period.

We conduct a similar exercise for all the governance variables having significant coefficients in models 5 through 8 of Table VIII.[18] These variables include hostility, proportion of outsiders on the board, blockholder ownership, and CEO duality. The sensitivity of implied probabilities to changes in these governance variables is reported in Table XI. The results in Panel A indicate that the implied probability of post-takeover CEO turnover is higher in hostile takeovers

[18] Recall that IAORA is the performance metric in this table. We arrive at similar conclusions using either SMBCAR or MBA ratio as the performance metric. For purposes of brevity, we do not report these results, but they are available from the authors upon request.

Table XI

Implied Probabilities of Post-takeover CEO Turnover for Governance Variables by Subperiod

The table reports implied probabilities of post-takeover CEO turnover by subperiod for models 5 through 8 in Table VIII where IAORA is the performance metric. The median level in each extreme performance quartile for the variable of interest, the mean values for all the governance variables, and the median level of IAORA are used to estimate implied probabilities. In computing the implied probabilities for indicator variables, we substitute values of 0 or 1. Operating return on assets (ORA) equals operating income before depreciation and taxes (COMPUSTAT data item 13) as a percentage of total assets (COMPUSTAT data item 6). The industry level is measured as the median operating performance of firms in the same industry as the target firm based on four-digit SIC codes. Thus, IAORA is the median level of industry-adjusted ORA and is measured over four different pre-takeover windows. Quartile 1 (4) represents the top (bottom) quartile for that variable. Year −1 is the fiscal year preceding the year of the first announcement of the takeover.

	Implied Probability of Post-takeover CEO Turnover (%)							
	1979 to 1988				1989 to 1998			
Performance Quartile	Year −1	Years −2 to −1	Years −3 to −1	Years −4 to −1	Year −1	Years −2 to −1	Years −3 to −1	Years −4 to −1
Panel A: Hostile vs. friendly								
Friendly	35.96	36.62	36.49	36.59	66.61	66.07	65.10	64.46
Hostile	61.08	60.12	59.17	59.06	71.96	72.94	73.70	75.59
Difference	25.12	23.50	22.68	22.47	5.35	6.87	8.60	11.13
Panel B: Proportion outsiders (excluding grays)								
Quartile 1	31.22	30.98	30.80	30.45	67.61	67.16	67.93	68.60
Quartile 4	62.87	63.14	62.39	62.82	70.26	70.97	69.85	70.27
Difference	31.65	32.16	31.59	32.37	2.65	3.81	1.92	1.67
Panel C: Blockholder ownership								
Quartile 1	35.63	34.09	33.95	33.90	68.45	68.63	69.03	68.93
Quartile 4	56.65	58.18	57.39	57.46	69.35	69.46	68.74	69.87
Difference	21.02	24.09	23.44	23.56	0.90	0.83	−0.29	0.94
Panel D: CEO duality vs. no CEO duality								
No CEO duality	66.04	64.51	62.85	63.20	50.95	52.25	50.00	51.14
CEO duality	41.38	41.79	41.62	41.55	72.83	72.73	72.97	73.37
Difference	−24.66	−22.72	−21.23	−21.65	21.88	20.48	22.97	22.23

than in friendly takeovers. However, the difference in implied probabilities for hostile versus friendly targets ranges from 22.47 to 25.12% for the subperiod 1979 to 1988, but only from 5.35 to 11.13% for the subperiod 1989 to 1998. In Panel B, we observe that the implied probability of CEO turnover is lower if the proportion of outsiders on the board is higher. Again, this effect appears to be economically significant only during the subperiod 1979 to 1988. Specifically, the difference in implied probabilities across extreme quartiles of proportion of outsiders ranges from 31.59 to 32.37% and only 1.67 to 3.81% for the subperiods 1979 to 1988 and 1989 to 1998, respectively. We observe a similar pattern with respect to blockholder ownership in Panel C. A higher blockholder ownership is associated with a lower implied probability of post-takeover CEO turnover, but this effect is once more limited to the subperiod 1979 to 1988. Finally, in Panel D, we find that for the subperiod 1989 to 1998, target firms with CEO duality had a probability of CEO turnover of approximately 22% higher than target firms without CEO duality. The results related to CEO duality for the 1979 to 1988 period need to be viewed with caution for the following two reasons: (1) about 91% of firms had CEO duality in that time period and therefore the sample with no CEO duality is small, and (ii) the coefficient related to duality is insignificant for this time period in all the estimated logistic regressions.

In summary, these results indicate that while there are economically significant relations between the probability of post-takeover CEO turnover with our performance metrics and governance variables like hostility, proportion outsiders on the board, and blockholder ownership, at the same time, these relations are clearly limited to the early subperiod 1979 to 1988.

VI. Hostility and Disciplinary Takeovers

Until now, we have classified a takeover as disciplinary if there is post-takeover CEO turnover, while all other takeovers have been classified as nondisciplinary. Another commonly used approach to classify takeovers as disciplinary or nondisciplinary is based on target management reaction to a takeover bid. For example, Morck et al. (1988b) argue that hostile takeovers are more likely to be disciplinary, and that friendly takeovers are more likely to be synergistic. If hostile takeovers are indeed more likely to be disciplinary, then we would expect target firms in these takeovers not only to exhibit higher post-takeover turnover in the CEO, but also to show poorer performance relative to target firms in friendly takeovers. To provide further insight into the nature of discipline exerted by corporate takeovers, we extend our previous analysis to examine these differences between hostile and friendly takeovers.[19]

We first look at CEO turnover rates in target firms of hostile versus friendly takeovers. For the full sample, 59% of hostile target firms have post-takeover CEO turnover, compared to 45% for target firms in friendly takeovers. The

[19] For purposes of brevity, we do not report the detailed results in tables. Instead, we report all the key results in the text of the paper. These results are available upon request from the authors.

post-takeover CEO turnover rate associated with hostile targets is significantly higher ($p < 0.05$) than that associated with friendly targets. On further examination, we find that this difference is significant only in the earlier subperiod, 1979 to 1988. For this subperiod, the post-takeover CEO turnover rate is 59% for hostile targets, and 37% for friendly targets, with a highly significant ($p < 0.01$) difference in turnover rates between these two groups of target firms. Our evidence for higher post-takeover CEO turnover in hostile takeover targets is consistent with the higher post-takeover board turnover documented by Franks and Mayer (1996) for U.K. targets over the period 1985 to 1986. By contrast, Martin and McConnell (1991) find no difference in CEO turnover for hostile versus friendly takeovers for U.S. targets during the period, 1958 to 1984. This contrasting result possibly reflects the largely non-overlapping nature of the sample periods and the concomitant differences in the regulatory environment, economic conditions, and governance regimes.[20]

Since hostile takeovers are often believed to be more disciplinary than friendly takeovers, we investigate whether the higher CEO turnover associated with hostility is related to pre-takeover performance. To examine this prospect more carefully, we split the sample into hostile versus friendly takeovers and test for differences in pre-takeover performance. As before, we compute SMBCARs and market model-adjusted abnormal returns as measures of past stock price performance for target firms involved in hostile and friendly takeovers. Using either return benchmark for all the performance windows, statistical comparisons of average abnormal returns show no significant differences between target firms in hostile versus friendly takeovers for the full sample, as well as each of the 10-year subperiods. Thus, while hostile target firms exhibit higher pre- and post-takeover CEO turnover, pre-takeover performance of hostile targets is not significantly different from that of friendly targets.

Additionally, we repeat our tests using the IAORA and the MBA as alternative measures of performance. We document no significant differences between target firms in hostile versus friendly takeovers based on IAORA as the performance measure. Thus, we find no difference in the pre-takeover performance of hostile and friendly targets based on stock price and operating performance measures. This indicates that the higher post-takeover CEO turnover rate associated with hostile targets is not related to past performance.

However, hostile takeover targets had, on average, a significantly ($p < 0.05$) lower MBA measured at the end of the fiscal year immediately prior to the year of the takeover than friendly takeover targets (1.05 vs. 1.22). Franks and Mayer (1996), Shivdasani (1993), and Schwert (2000) among others also document that hostile targets have lower market-to-book ratios than friendly targets. This result may indicate that the market expects hostile target firms to have

[20] See for example Weston, Siu, and Johnson (2001) for details on regulatory changes, Bhagat, Shleifer, and Vishny (1990) and Mitchell and Mulherin (1996) for changes in the economic environment, and Huson et al. (2001) for a discussion of relevant changes in the corporate governance environment during this time period.

worse future performance than friendly target firms. On the other hand, it may also indicate that hostile target firms are relatively undervalued, and managerial resistance is one way of communicating the target's value to the market (see, e.g., Schwert for similar interpretations). Importantly, this effect is present in the subperiod 1979 to 1988, but not in the subperiod 1989 to 1998.

Finally, we also compute bid premiums using the market model abnormal returns and the CRSP equally weighted monthly index returns as the market proxy for target firms in hostile and friendly takeovers over a window that starts −5 days prior to the first announcement of the takeover through +5 days after the final bid in the contest. For the full sample, we find the event-period abnormal return is 40.06% for hostile targets and 33.23% for friendly targets, and that the difference in abnormal returns is significant at the 5% level.[21] This bid premium is, however, significantly higher for hostile targets in the earlier subperiod 1979 to 1988 (41.64% for hostile targets versus 33.41% for friendly targets; $p < 0.05$), but not in the latter subperiod 1989 to 1998 (35.88% for hostile targets versus 32.97% for friendly targets; $p = 0.65$).[22]

In summary, our full sample results indicate that while hostile targets have a higher post-takeover CEO turnover than friendly targets, there is no difference in their stock price or operating performance prior to the takeover. Furthermore, hostile targets have lower MBA and higher bid premiums than friendly targets. These results are driven by our earlier subperiod 1979 to 1988. We find no difference between hostile and friendly targets with regard to any of these attributes for the latter subperiod 1989 to 1998.[23]

For our full sample period and the subperiod 1979 to 1988, our results mirror those documented by Franks and Mayer (1996) in their examination of U.K. targets over the period 1985 to 1986. Thus, we are inclined to conclude much like Franks and Mayer that the higher post-takeover CEO turnover rate for target firms in hostile takeovers reflects disagreements over the bid price and the future expected performance of the target firm. We cannot, however, rule out the possibility that in spite of not underperforming in the past, CEOs of

[21] The higher bid premium for hostile targets has been previously documented in the literature (see, e.g., Franks and Mayer (1996) and Schwert (2000)).

[22] We also compute bid premiums based on the same event window for target firms with and without post-takeover CEO turnover. We find no statistically significant difference in the bid premium for the no turnover (34.42%) versus the turnover group (37.73%) for the full sample. Thus, our evidence suggests that bid premiums are not higher for target firms that experience post-takeover CEO turnover. Martin and McConnell (1991) conduct a similar analysis and arrive at the same conclusion.

[23] For a sample of U.S. target firms over the period 1958 to 1984, Martin and McConnell (1991) also find that hostile targets do not have significantly different post-takeover CEO turnover rates or past stock price performance in relation to friendly targets. They conclude that classification of a takeover as hostile or friendly does not allow them to distinguish between disciplinary and nondisciplinary takeovers based on post-takeover CEO turnover rates and pre-takeover stock price performance. However, they do not investigate differences between these two groups of target firms based on other performance metrics.

hostile targets are replaced because they are either wed to old strategies and styles that are inappropriate in a changing economic environment and/or they may not have the skills to successfully navigate their firms in the future (see Jensen and Ruback (1983) for arguments along these lines).

A possible explanation for the absence of differences between hostile and friendly targets over the period 1989 to 1998 may lie in the explosion in anti-takeover statutes and corporate takeover defenses after 1988. Comment and Schwert (1995) and Schwert (2000) argue that anti-takeover amendments and managerial resistance are devices that can be used to obtain a bargaining advantage in a takeover contest. The increase in the incidence of anti-takeover amendments after 1988 may have reduced the need to use managerial resistance to obtain a bargaining advantage in takeover negotiations. Thus, for U.S. takeovers, differences in post-takeover CEO turnover rates, bid premiums, and performance between hostile and friendly targets are only observed for the period in which the takeover activity has been characterized in the literature as marked by hostility.

VII. Conclusions

A widely accepted motive for corporate takeovers is the elimination of inefficient target management. As Brealey and Myers (2000, p. 945) contend, "There are always firms with unexploited opportunities to cut costs and increase sales and earnings. Such firms are natural candidates for acquisition by other firms with better management." Despite its general acceptance among financial economists, there is relatively little empirical evidence to support this hypothesis. This paper makes several important contributions to the extant literature on the disciplinary role of corporate takeovers. First, it provides new U.S. evidence regarding the relation between the likelihood of post-takeover CEO turnover and pre-takeover performance over a more recent time period, 1979 to 1998. Specifically, we find a weak but significantly negative relation between CEO turnover and various performance metrics, indicating a disciplinary motive for corporate takeovers.

Second, in contrast to the evidence reported in Martin and McConnell (1991) for U.S. takeover targets over the sample period 1958 to 1984, we find a positive relation between hostility and the likelihood of post-takeover CEO turnover. Our results, however, indicate that the higher post-takeover CEO turnover associated with hostile takeovers is not related to past performance, but instead is likely due to disagreements about the bid price and/or future expected performance. Thus, while post-takeover CEO turnover and managerial resistance have both been widely used to characterize takeovers as disciplinary, our results highlight a subtle difference between the two. While post-takeover CEO turnover reflects discipline applied by corporate takeovers based on both past and prospective performance, managerial resistance is associated with subsequent CEO turnover possibly due to aggressive bargaining by target management and/or disagreements about future expected performance.

Third, we shed light on how the prevailing corporate governance regime affects the intensity of takeover-related discipline. While we document significantly higher post-takeover CEO turnover rates in the latter period, 1989 to 1998, we find that any significant performance–turnover relation is limited to the earlier period, 1979 to 1988. Thus, the higher post-takeover turnover rates in the 1990s do not reflect performance-related discipline. Further, we find that hostile targets have higher post-takeover CEO turnover rates, higher bid premiums, and lower market-to-book ratios than friendly targets, but once again, only during the 1979 to 1988 period. We find no differences in these attributes between hostile and friendly target firms for the 1989 to 1998 period.

Finally, we provide new evidence concerning the interplay between corporate takeovers and other governance mechanisms as alternative disciplining mechanisms over different corporate governance environments. Specifically, we find evidence generally consistent with the idea that corporate takeovers serve as a substitute disciplining mechanism to the proportion of outside directors on the board and blockholder ownership, but *only* in the relatively less-evolved governance regime of the earlier sample period, 1979 to 1988.

Collectively, our evidence is consistent with the view that the corporate takeover market acts as a "court of last resort," that is, it is an external source of discipline applied when internal control mechanisms are relatively weak or ineffective. The decline in hostile takeover activity during the period 1989 to 1998 was accompanied by more evolved alternative governance mechanisms. As these mechanisms became more prominent and effective during the 1990s, the takeover market's role as the ultimate source of managerial discipline declined. Our results are also consistent with Holmstrom and Kaplan (2001), who observe that relative to the 1980s, internal governance mechanisms appear to play a larger role than corporate takeovers as instruments for corporate restructurings in the 1990s. At the same time, the explosion in anti-takeover statutes and corporate takeover defenses after 1988 may have contributed additionally to the decline in corporate takeovers as a disciplinary mechanism. This higher incidence of anti-takeover amendments can also potentially explain the reduced need to use managerial resistance to obtain a bargaining advantage in takeover negotiations.

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