Takeovers And Incentives For Earnings Management: An Empirical Analysis

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Abstract

This study tests the hypothesis that managers of firms that are targets of takeovers systematically increase reported earnings in the quarters immediately preceding and following initiation of the takeover attempt. Using both a modified version of the Jones method and the DeAngelo method, discretionary accounting accruals are examined for a sample of 110 firms that were targets of tender offers between 1985 and 1989, inclusive, and for a control group of nontargets. Results for the quarter ended prior to initiation support the hypothesis. Additional tests performed on the sub-samples of hostile and friendly takeover targets indicate that the results obtained for the sample as a whole are primarily due to the hostile takeover targets. No evidence of earnings management is found in the quarter ended subsequent to initiation.

Introduction

A common view among accounting researchers and practitioners, financial analysts and investors is that management deliberately selects accounting procedures and accruals in order to increase or decrease reported earnings. Previous researchers have hypothesized that certain economic and contracting variables (management compensation plans and debt contracts, for example) provide management with incentives to maximize its own self-interest by increasing or decreasing reported earnings.¹ Researchers have also examined the impact of specific events on management's incentives to increase or decrease reported earnings.² This study investigates the impact of a specific event - a takeover - on management's incentives to increase reported earnings.

Readers with comments or questions are encouraged to contact the author via e-mail.

Managers faced with the threat of a takeover (especially a hostile one) have incentives to manage reported earnings because they face potentially significant welfare losses if the takeovers are successful. Although the empirical evidence indicates that target shareholders profit from successful takeovers (Jensen and Ruback, 1983), target managers often lose some or all of their control over the firm (Perham, 1981; Walkling and Long, 1984). Previous empirical evidence indicates that managers adopt takeover defenses to entrench themselves and maintain control.³

Accordingly, managers of firms that are targets of takeovers have incentives to increase reported earnings to convince shareholders that managers are performing efficiently (or to hide their non-value maximizing behavior). These incentives are likely to be greater for managers

who contest takeovers. Previous research in finance suggests that the motives underlying hostile and friendly takeovers differ. Morck, Shleifer, and Vishny (1988) suggest that friendly takeovers are synergistic. The purpose of hostile takeovers, however, is to replace or change the policies of managers who do not maximize firm value (Morck, Schleifer and Vishny, 1988, 1989).

In a study of earnings management during proxy contests, DeAngelo (1988) provides evidence that managers systematically increase reported earnings to convince shareholders that they are performing efficiently and avoid losing their jobs. Groff and Wright (1989) and Christie and Zimmerman (1994) also provide weak support for the hypothesis that managers of target firms (both hostile and friendly combined) adopt income-increasing accounting methods. This study differs from the Groff and Wright (1989) and Christie and Zimmerman (1994) studies in two important ways. First, the measure of earnings management used in this study, the discretionary quarterly accrual, is a more powerful measure than the one used by Groff and Wright and Christie and Zimmerman. Second, the sample is split between hostile and friendly takeovers because managers of these firms are likely to have different incentives.

The results of this study are consistent with the hypothesis that managers of firms that are targets of hostile takeover attempts adopt income-increasing accruals during the quarter ended prior to initiation of the takeover attempt. Bivariate tests that control for industry and size effects provide evidence that managers of hostile takeover targets deliberately increase reported earnings during the quarter ended prior to initiation, but not during the first quarter following initiation. These findings suggest that managers believe they can convince shareholders that they are performing efficiently early on in the takeover attempt; however, as the takeover attempt progresses, they feel they can no longer benefit from adopting income-increasing accruals. The findings of this study also provide support for the argument made by Morck, Shleifer, and Vishny

(1988) that studies which do not attempt to control for the different motives underlying takeovers and acquisitions can provide misleading results.

The remaining sections of this paper include, first, a summary of prior empirical results. Next, the research design and sample are described and the empirical results are discussed. The final section presents a brief summary and conclusions.

Summary of Prior Empirical Results

The empirical literature on accounting method choice is extensive. Researchers have examined many different accounting choices such as the choice between the full-cost method and the successful-efforts method of accounting for oil and gas firms (Lilien and Pastena, 1982), the choice between capitalizing and expensing interest costs (Bowen, Noreen, and Lacey, 1981), and the relationship between management bonus plans and managers' choice of accounting accruals (Healy, 1985).⁴ Subsequent studies have also tested for evidence of earnings management in the context of specific events. These studies have obtained mixed results. DeAngelo (1986) and Liberty and Zimmerman (1986), for example, are unable to find evidence of earnings management during management buyouts and labor union contract negotiations, respectively. DeAngelo (1988), however, finds that managers adopt income-increasing accruals during proxy contests for board seats.⁵

Based on her findings, DeAngelo (1988) concludes that managers systematically increase reported earnings during proxy contests to convince voting shareholders that managers are doing a good job. Reported earnings, therefore, are used to measure managerial efficiency, and poor earnings performance can cost managers their jobs. This suggests the hypothesis that managers of firms that are targets of takeovers also have incentives to increase reported earnings to convince shareholders that managers are performing efficiently (or to hide the fact that they are engaging in non-value maximizing behavior).

If shareholders believe that managers are performing efficiently, they may not tender their shares and the takeover attempt may be averted. In addition, to the extent that increasing reported earnings increases the pre-offer market price or the offer price that shareholders require from the bidder, an increase in reported earnings may lead to an increase in the takeover premium required and, thus, discourage the hostile bidder.

This study tests the hypothesis that managers of firms that are targets of takeovers systematically increase reported earnings in the quarters immediately preceding and following initiation of the takeover attempt, but prior to its completion. Previous studies by Groff and Wright (1989) and Christie and Zimmerman (1994) have provided support for the hypothesis that managers of firms that are targets of takeover attempts are more likely to select income-increasing accounting methods. Groff and Wright find support for their argument that targets of takeover attempts are more likely to select "self-serving" accounting methods because the forces that help align managers' and shareholders' incentives have failed. Christie and Zimmerman conclude that, although some "opportunism" is present in the decisions of managers of target firms, the primary influence over managers' accounting choices is "efficiency".

This study differs from the Groff and Wright (1989) and Christie and Zimmerman (1994) studies in several ways. Groff and Wright do not split their sample between hostile takeover targets and friendly takeover targets; therefore, they only examine the accounting choices made by all takeover targets. Managers of hostile and friendly targets, however, may have different incentives. According to Morck, Shleifer, and Vishny (1988), studies should distinguish between these incentives. Christie and Zimmerman find no difference in the accounting choices made by takeover targets classified as non-synergistic and those classified as "other". This study, however, uses a more precise definition of hostility and, as a result, different criteria for splitting the sample.

Another difference between this study and the Christie and Zimmerman study relates to the period of time examined. Christie and Zimmerman examine managers' accounting choices over an extremely long period of time (i.e., for a period of 11 years prior to the year of the takeover attempt). This study examines a shorter time period because substantial uncertainty exists about whether a firm will be a takeover target many years in the future. A manager's choice of accounting procedures two or more years before initiation of a takeover attempt is likely to be for reasons completely unrelated to the takeover attempt.

Both the Groff and Wright and Christie and Zimmerman studies use a different measure of earnings management. Their measure is the choice of a single accounting method. They examine the depreciation, inventory, and investment tax credit accounting methods selected by takeover targets. Tests that examine the choice of a single accounting method are not very powerful because the effect of one particular accounting method can offset the effect of another accounting method (Watts and Zimmerman, 1990). If the measure used in this study (the discretionary accrual) successfully extracts the discretionary component of the accrual, then it provides a more powerful test of the earnings management hypothesis because accruals reflect the net effect on earnings of many different accounting procedures (Watts and Zimmerman, 1986, 1990). In addition, accruals are affected by many factors, including changes in accounting principles, changes in estimates, changes in capitalization versus expense decisions, and decisions relating to the deferral or recognition of revenues and expenses. The manipulation of certain factors that affect accruals is more subtle and more likely to go undetected than changes in accounting principles under GAAP (DeAngelo, 1986). If an accounting principle change is made, the cumulative effect of the change must be reported in the financial statements of the period in which the change occurs.

Research Design and Sample Selection

Approaches to Testing for Earnings Management

The objective of this paper is to test for earnings management among targets of takeovers. Two approaches are used to achieve this objective. Both approaches use the discretionary accrual as the measure of earnings management. The first approach focuses on a comparison of the discretionary accruals of all takeover targets to those of an industry- and size-matched sample of nontargets. One problem with using an industry-matched sample of nontargets, however, is that takeovers tend to be concentrated in specific industries. If one firm in an industry is the target of a takeover attempt, other firms in the same industry may fear that they soon will be targets of takeover attempts.⁶ These other firms may also have incentives to manage (increase) reported earnings. To the extent that this problem is a serious one, the results of this study will be biased against finding support for earnings management among targets of takeover attempts.

The second approach involves splitting the sample between hostile and friendly takeover targets and examining the discretionary accruals of each group separately. Managers of firms that are targets of friendly takeovers may have less incentive to systematically adopt income-increasing measures than managers of firms that are targets of hostile takeovers. One reason for this is that managers of firms that are targets of friendly takeovers are not actively resisting the takeover attempt. Morck, Shleifer, and Vishny (1988) suggest that the purpose of friendly or "synergistic" takeovers is to take advantage of benefits obtained from integrating the businesses of two firms. Thus, managers of firms that are targets of friendly takeovers, are less likely to be concerned about losing their jobs. However, they are still likely to be concerned with increasing reported earnings to increase the takeover premium demanded by investors. One problem with splitting the sample between hostile and friendly takeover attempts is that classification errors are likely to occur. To the extent that this problem is a serious one, the results will be

biased against finding strong support for the earnings management hypothesis.

Selection of Sample of Target Firms

The initial sample of target firms is composed of all AMEX and NYSE companies, except financial companies, that were targets of tender offers (both friendly and hostile) between 1985 and 1989, inclusive.⁷ This sample consists of approximately 363 firms and 427 tender offers, and is obtained from Securities Data Company's *Merger and Corporate Transactions Database*. Both successful and unsuccessful takeover attempts are included in the sample. To remain in the sample, the target firm must have made at least one quarterly earnings announcement between initiation and completion of the takeover attempt. The initiation date must either precede or be the same as the quarter-end date to which the earnings announcement pertains. The *Wall Street Journal Index* is examined to determine whether the above conditions are met. This procedure reduces the initial sample of target firms to 166.

Initiation for both hostile and friendly takeover attempts is defined as the date of the first *Wall Street Journal* report or *Dow Jones News Wire* of takeover or acquisition activity.⁸ To verify that the tender offer was friendly or hostile, articles appearing in the *Wall Street Journal Index* and the *Dow Jones News Wire* from one year prior to the quarter of interest to one year after the quarter of interest are read. A takeover bid is considered hostile if the initial bid was not conditional upon target board approval and one or more of the following occurred subsequent to initiation of the takeover bid: 1) target management expressed verbal opposition; 2) target management sought a white knight; 3) target management filed court action; 4) target management adopted one of the following types of takeover defenses: a poison pill plan, a supermajority provision (except for fair-price amendments), and/or a classified-board provision; and 5) target management proposed a dual-class recapitalization or a management buyout. A takeover bid that is not considered hostile is

classified as friendly. This classification scheme is similar to that used by Morck, Shleifer, and Vishny (1989).

If the takeover attempt is classified as friendly, completion is defined as the date of the first *Wall Street Journal* report stating one of the following: 1) over 90% of the target firm's shares had been tendered; or 2) the acquisition was complete. If the takeover attempt is hostile, completion is defined as the date of the first *Wall Street Journal* report stating that the battle was over (hostile bidder withdrew or the target firm agreed to be acquired).⁹ If no information appears in the *Wall Street Journal Index* concerning completion, the effective date of the acquisition or the date the bid was withdrawn according to the SDC is used.

Financial information for each target firm in the sample is obtained from Standard & Poor's *Compustat* (hereafter referred to as the Standard & Poor's tape). The Standard & Poor's tape contains selected quarterly financial statement information for 166 NYSE and AMEX firms that were targets of tender offers between 1985 and 1989, inclusive, and announced earnings at least once between initiation and completion of the takeover attempt. The tape contains approximately 74 quarters of data, starting with the third calendar quarter of 1973.¹⁰

The sample of target firms is reduced from 166 to 111 because data necessary to compute the unexpected accrual for 55 firms for the quarters immediately preceding and following initiation of the takeover attempt are missing from the Standard & Poor's tape. One additional target firm is dropped from the sample because the unexpected accrual is an extreme outlier.¹¹ The tests performed in this study contain various subsets of these 110 target firms due to missing data.

Table 1 includes a description of the sample of 110 target firms. Fifty-seven of these firms were hostile takeover targets and 53 were friendly takeover targets at the quarter-end date of the last fiscal quarter prior to initiation (denoted quarter t-1). Nine of the firms initially classified as hostile takeover targets were classified as friendly takeover targets at the quarter-end date of the first quarter immediately following initiation (denoted quarter t). By the quarter-end date for quarter t, either the hostile suitor was no longer a threat or the target had agreed to be acquired by the hostile suitor. The year with the largest number (i.e., 34) of takeover initiations is 1988; however, the 34 takeovers only represent 30.9% of the sample of targets. Size is measured as total assets for the quarter ended t-2. Quarter t-2 is used to make sure that the size measure is not affected by the takeover attempt.

Table 1
Description of Entire Sample of Takeover Targets^a

Year of Initiation	Hostile ^b	Friendly	Total	Avg. Total Assets (\$million)
1985	11	6	17	1,644.86
1986	10	14	24	936.42
1987	10	11	21	1,278.50
1988	17	17	34	599.29
1989	9	5	14	1,553.26
Total	57	53	110	1,085.52

^aSample sizes used in each statistical test vary due to missing observations.

^bIncludes 9 firms that are classified as friendly takeover targets at quarter t. These firms were initially hostile takeover targets. By the time quarter t ended, however, the takeover attempt had turned friendly.

Average total assets for the full sample of targets (both hostile and friendly) is \$1,085.52 million. Median total assets (not reported in Table 1) is \$387.34 million. Size varies across time but exhibits no trend.

Selection of Matched Sample of Nontargets

To control for industry and size effects, at least one matched nontarget firm is found for each of the 110 hostile and friendly takeover targets in the sample. The matched sample of nontargets is constructed by selecting AMEX or NYSE firms from the COMPUSTAT Quarterly Industrial file which meet the following criteria:

1. The control firm must be in the same three-digit SIC industry as the target firm. The target firm's SIC code per the Standard & Poor's tape is compared to the SIC code provided by Securities Data Company. If the two codes are the same, that code is used; otherwise, the code appearing in *Standard & Poor's Register of Corporations, Directors and Executives; United States and Canada* prior to initiation is used. In some cases, control firms for one target firm (usually a conglomerate involved in many different industries) are taken from more than one three-digit SIC code.¹²
2. At quarters t and t-1, the control firm must have had either the same fiscal year-end date as the target firm or a fiscal year-end within two months of the target firm's fiscal year-end.
3. The control firm had total assets at quarter t-2 within 25% of the target firm's total assets at quarter t-2.
4. The control firm must not have been one of the following in the year prior to or subsequent to the quarter-end date for quarter t: (1) a target of a takeover attempt (neither friendly nor hostile), (2) proposing a merger or leveraged buy-out, (3) going through bankruptcy, (4) going through a major restructuring (selling or spinning off a major portion of its business, for example), and (5) a suitor for the target firm. This is determined by examining the *Wall Street Journal*

Index.

In cases where more than one firm on the COMPUSTAT tape meets the above criteria, all the firms (maximum of 5) are used as matches. In cases where no firms on the COMPUSTAT tape meet the above criteria, the fiscal year-end requirement is dropped and the control firms are ranked on the basis of size (i.e., total assets) at quarter t-2. Those firms (maximum of 5) that are closest in size to the target firm are used. This procedure yields a sample of 186 nontarget control firms.

Table 2 presents descriptive statistics for the samples of target and nontarget firms. T-tests and Wilcoxon Rank Sum tests are used to test for differences between target and nontarget firms. The descriptive measures presented in Panel A of Table 2 are computed using quarterly data. Those presented in Panel B are computed using annual data for the fiscal year ended immediately prior to initiation of the takeover attempt. All variables are measured for each nontarget firm using the quarter or fiscal year-end closest in calendar time to the matched target firm's quarter or fiscal year-end of interest.

As shown in Panel A, size is measured as total assets at quarter t-2. T-test and Wilcoxon Rank Sum test results indicate that differences in size between the takeover targets and their matched nontargets are not statistically significant. Although mean total assets for the full sample of takeover targets is smaller than mean total assets for the matched firms, median total assets is slightly larger for the takeover targets. This finding suggests that the control sample includes a few very large firms.

Other descriptive variables presented in Panel A of Table 2 include return on assets for quarter t-1, long-term debt to total assets for quarter t-1, and changes in return on assets for quarters t and t-1. Return on assets is measured as net income before extraordinary items divided by total assets. The change in return on assets for quarter t (t-1) is measured as return on assets for quarter t (t-1) minus return on assets for

Table 2
Descriptive Statistics for Sample of Takeover Targets and Control Group of Nontargets

Descriptive Variables: mean (median)	Full Sample			Hostile Targets and their Matches			Friendly Targets and their Matches		
	All Targets N=110	All Matches N=186	t-statistic (Wilcox. Z) for diff. in:	Hostile Targets N=57	Matches for Hostile Targets N=95	t-statistic (Wilcox. Z) for diff. in:	Friendly Targets N=53	Matches for Friendly Targets N=91	t-statistic (Wilcox. Z) for diff. in:
Panel A. Quarterly Data									
Size - Total Assets for Quarter t-2	1085.52 (387.34)	1714.52 (355.02)	-1.23 (0.01)	1260.55 (564.68)	1344.33 (550.71)	-0.26 (0.14)	897.28 (241.93)	2100.99 (253.86)	-1.22 (0.02)
Return on Assets for Quarter t-1 (%) ^a	0.70 (1.08)	1.33 (1.48)	-1.79* (-2.46**)	1.30 (1.13)	1.33 (1.58)	-0.08 (-1.95**)	0.07 (0.90)	1.34 (1.42)	-2.11* (-1.74*)
Long-term Debt/Total Assets - Quarter t-1 (%)	25.18 (23.58)	21.61 (20.89)	1.58 (1.21)	22.99 (24.00)	23.27 (22.30)	-0.12 (0.36)	27.54 (21.91)	19.89 (18.45)	1.93* (1.41)
Change in Return on Assets for Quarter t- 1 ^b	-0.0028 (-.0005)	0.0023 (0.0008)	-1.40 (-1.27)	0.0003 (-.0007)	-0.0010 (0.0008)	0.55 (-0.63)	-0.0062 (-.0004)	0.0057 (0.0011)	-1.69* (-1.25)
Change in Return on Assets for Quarter t ^{b,c}	0.0022 (-.0019)	-0.0026 (0.0001)	0.66 (-1.37)	-0.0021 (-.0017)	-0.0030 (0.0004)	0.32 (-1.06)	0.0056 (-.0021)	-0.0023 (-.0008)	0.61 (-0.89)
Panel B. Annual Data for the Year Ended Immediately Prior to Initiation									
Return on Assets (%) ^a	2.03	5.24	-2.07**	4.54	5.43	-0.83	-0.66	5.05	-1.92*
Sales/Assets	1.56	1.49	0.65	1.64	1.63	0.06	1.47	1.34	1.15
Operating Margin (%) ^d	9.18	12.43	-1.43	11.00	12.53	-1.08	7.23	12.33	-1.13

* Significant at the 0.10 level (two-tailed).

** Significant at the 0.05 level (two-tailed).

^aReturn on Assets = Net Income before Extraordinary Items/Total Assets.

^bChange in Return on Assets for Quarters t(t-1) = Return on Assets_{t(t-1)} - Return on Assets_{t-4(t-5)}.

^cN for the firms classified as hostile or friendly changes at quarter t because 9 takeover targets that are classified as hostile at quarter t-1 are classified as friendly at quarter t.

^dOperating Margin = Operating Income before Depreciation/Sales.

quarter t-4 (t-5). The test results reported in Panel A indicate that only one variable is significantly different for the full sample of targets and nontargets (both friendly and hostile combined). The accounting rate of return on assets for the control group is greater than and significantly different from the rate of return on assets for the target firms (t-statistic = -1.79, Wilcoxon Z = -2.46). When rates of return are computed separately for the hostile and friendly takeover targets and their corresponding matches, comparisons of these ratios indicate that the difference in return on assets is primarily due to the friendly targets and their matches. Although the hostile takeover targets have a lower rate of return than their matched nontargets, only the Wilcoxon Rank Sum test results indicate that this difference is significant. The friendly takeover targets also have a lower rate of return on assets than their matched nontargets, however, both parametric and nonparametric tests indicate that this difference is significant (t-statistic = -2.11, Wilcoxon Z = -1.74).

The other descriptive variables included in Panel A are long-term debt to total assets and change in return on assets for quarters t and t-1. These variables are not significantly different for the hostile takeover targets and their matched nontargets. The test results for the friendly takeover targets are not consistent. The Wilcoxon Rank Sum test results indicate that none of the differences between the friendly takeover targets and their matched firms are statistically significant. The t-test results, however, indicate that the friendly takeover targets are more highly levered than their matches (t-statistic = 1.93). In addition, t-test results indicate that the change in return on assets from quarter t-5 to quarter t-1 for the friendly takeover targets is negative and significantly different from the change (increase) in return on assets for the matched control group. This difference is significant at the 10% level.

Results reported in Panel B are consistent with those of Panel A. Panel B includes measures of return on assets, sales to total assets, and operating margin. Operating margin is calcu-

lated as operating income before depreciation divided by net sales. The only variable which is significantly different for the two groups is return on assets. This difference is primarily due to the friendly targets.

In conclusion, the results reported in Table 2 indicate that the hostile takeover targets are similar to their matched control firms in terms of size, leverage, and asset turnover. The hostile takeover targets are slightly less profitable than their matched firms. The friendly takeover targets tend to be less profitable and have more debt than their matched firms.

Measurement of Earnings Management

1. Quarterly Earnings Announcements

This study focuses on earnings for two quarters: the first quarter ended subsequent to initiation of the takeover attempt (quarter t) and the quarter preceding quarter t (quarter t-1). If managers manipulate reported earnings when threatened by a takeover attempt, the quarters closest in calendar time to initiation of the takeover attempt are hypothesized to exhibit the greatest amount of income management. This is based on the argument that the earnings announcement which is likely to have the most influence over shareholders' beliefs is the one closest to the start of the takeover attempt. Likewise, as the takeover attempt approaches completion, the outcome becomes more certain and managers are less likely to be able to influence this outcome by increasing reported earnings. Managers might also prefer to increase quarter t-1 earnings instead of earnings for quarters ended subsequent to initiation because shareholders are less likely to suspect that earnings for quarters prior to initiation are managed.

Table 3 presents a summary of the number of days between events such as fiscal quarter-ends, earnings announcements, initiation, and completion for the sample of 110 takeover targets. The average number of days between initiation and completion of the takeover attempt is 162.8. Quarter t ends an average of 35.1 days

Table 3
Summary of the Number of Days Between Events

Mean (Median) Number of Days between:	All Takeover Targets (N=110)	Hostile Targets (N=57)	Friendly Targets (N=53)	t-statistic for difference in:
Quarter-end t-1 and Initiation	55.9 (60.5)	52.2 (51)	59.8 (66)	-1.63
Earnings Announcement for Quarter t-1 and Initiation ^a	30.8 (27.5)	27.4 (21)	34.5 (32)	-1.73*
Initiation and Quarter-end t	35.1 (30.5)	38.6 (40)	31.2 (25)	1.56
Initiation and Earnings Announcement for Quarter t	63.9 (58)	66.1 (64)	61.5 (52)	0.77
Initiation and Completion	162.8 (137.5)	177.3 (136)	147.2 (142)	1.34
Quarter-end t-1 and the Earnings Announcement for Quarter t-1	33.7 (29)	30.7 (27)	37.0 (32)	-2.00**
Quarter-end t and the Earnings Announcement for Quarter t	28.8 (25.5)	27.4 (25)	30.3 (26)	-1.18

* Significant at the 0.10 level (two-tailed).

** Significant at the 0.05 level (two-tailed).

^aComputed using absolute values because the quarter t-1 earnings announcement can occur before or after initiation.

after initiation and the quarter t earnings announcement occurs an average of 63.9 days after initiation. If quarter t+1 ends 90 days after quarter t and the number of days between quarter-end t+1 and the earnings announcement is assumed to be 28.8, then the quarter t+1 earnings announcement would occur approximately 153.9 days after initiation or 8.9 days before completion. This is likely to occur too close to completion to influence shareholders.

announcements subsequent to initiation. In addition, one of the hostile takeover targets and 4 of the friendly takeover targets have quarter t-1 earnings announcements which occur on the same day as initiation.

Although the quarter t-1 earnings announcement usually occurs prior to initiation, the accrual at quarter t-1 is subject to manipulation by managers because managers often learn of a

As reported in Table 3, the event closest in time to initiation is the earnings announcement for quarter t-1. If managers manipulate earnings close to initiation, then quarter t-1 earnings will exhibit the greatest amount of income management. The mean number of days between the earnings announcement for quarter t-1 and initiation is 30.8. This number is computed using the absolute value of initiation date minus earnings announcement date for quarter t-1. Absolute values are used because the earnings announcement for quarter t-1 sometimes occurs after initiation. This can be the case even though quarter t-1 always ends prior to initiation. In fact, 16 of the 57 hostile takeover targets and 9 of the 53 friendly takeover targets have quarter t-1 earnings

takeover attempt before the information becomes public. In cases where initiation is the date a manager reports that he wants to take the firm private, then the manager must have prior knowledge of the takeover. Likewise, if a bidder attempts to negotiate in private with the target firm before his intent becomes public, then the manager would know about the takeover prior to the initiation date. In addition, initiation dates are sometimes preceded by takeover-related rumors where no actual bidder is mentioned and reports of share purchases by individuals or organizations that express no "intent" to take over the firm. To obtain an estimate of how many target firms were the subject of takeover-related rumors and/or 13-D filings or were contacted (through letters and phone calls, for example) by potential suitors prior to initiation, articles appearing in the *Wall Street Journal* and *Dow Jones News Wire* were read for a period of six months prior to initiation to one month after initiation. Information related to the above items was found for 48 of the 110 (43.6%) target firms. Of these 48 firms, 36 are classified as hostile takeover targets.

2. Definition of the Discretionary Accrual

The total quarterly accrual is computed as follows:

$$QACC_{i,t} = (CTCA_{i,t} - CCASH_{i,t}) - (CTCLIA_{i,t} - CCDEBT_{i,t}) - DEPR_{i,t}$$

where: $QACC_{i,t}$ = total quarterly accrual for firm i at quarter t ; $CTCA_{i,t}$ = change in total current assets for firm i at quarter t ; $CCASH_{i,t}$ = change in cash for firm i at quarter t ; $CTCLIA_{i,t}$ = change in total current liabilities for firm i at quarter t ; $CCDEBT_{i,t}$ = change in short-term notes and current maturities of long-term debt for firm i at quarter t ; and $DEPR_{i,t}$ = depreciation expense for firm i at quarter t . This accrual measure is similar to measures used by Jones (1991) and Dechow, Sloan and Sweeney (1995).

The total quarterly accrual is composed of a nondiscretionary component and a discretionary component. The discretionary compo-

nent is the measure of earnings management. It is computed as follows:

$$DQACC_{i,t} = QACC_{i,t} - NQACC_{i,t}$$

where: $DQACC_{i,t}$ = discretionary accrual for firm i at quarter t , and $NQACC_{i,t}$ = nondiscretionary accrual for firm i at quarter t . $NQACC_{i,t}$ is an estimate of what $QACC_{i,t}$ would be absent earnings management.

3. The Modified Jones Approach to Estimating the Discretionary Accrual

No theoretical model exists to explain what the quarterly accrual would be absent earnings management. Two methods are used in this study to estimate $NQACC_{i,t}$.¹³ The first method is based on the model developed by Jones (1991) and uses a time-series to compute the nondiscretionary accrual. Variables that proxy for economic conditions and firm-specific factors are included in the model. To obtain an estimate of the nondiscretionary accrual for each firm in the sample, a separate time-series regression is computed for each firm. The total actual accrual is regressed on gross fixed assets and changes in revenues over the estimation period. The parameters obtained from the estimation period regressions are used to compute the nondiscretionary accrual for the period of interest. According to Jones (1991), gross fixed assets and changes in revenues help control for the portion of the accrual that is nondiscretionary. Gross fixed assets are assumed to be related to nondiscretionary depreciation expense and changes in revenues are assumed to be related to changing economic conditions that affect the firm.

The number of target firms that both meet the criteria for inclusion in the modified Jones approach and have a matched nontarget firm that meets the criteria for inclusion in the time-series approach is 48 (42 of these at quarter t and 47 at quarter $t-1$).¹⁴ To be included in the sample, the firm must have enough data available on the Standard and Poor's tape or the COMPUSTAT Quarterly Industrial file to compute the accrual for quarter t (or quarter $t-1$) and to com-

pute a minimum of 10 quarterly accruals prior to quarter t-1. A firm is included in the sample even if the accruals prior to quarter t-1 are not consecutive; however, no more than four consecutive quarters can be missing in a series.

Ordinary least squares is used to estimate the following model for each firm:

$$QACC_{i,q}/TA_{i,q-4} = \alpha_i[1/TA_{i,q-4}] + \beta_{1i}[(CHGREV_{i,q} - CHGAR_{i,q})/TA_{i,q-4}] + \beta_{2i}[GPPE_{i,q}/TA_{i,q-4}] + \beta_{3i}[FDIFF_{i,q-1}/TA_{i,q-4}] + \beta_{4i}FOURQ_{i,q} + \mu_{i,q}$$

where: $TA_{i,q-4}$ = total assets for firm i at quarter $q-4$ (prior year total assets); $CHGREV_{i,q}$ = the change in revenues for firm i during quarter q ; $CHGAR_{i,q}$ = the change in accounts receivable for firm i during quarter q ; $GPPE_{i,q}$ = gross fixed assets for firm i at quarter q ; $FDIFF_{i,q-1} = (QACC_{i,q-1} - QACC_{i,q-2})$; $FOURQ_{i,q}$ = a dummy variable set equal to 1 if quarter q is firm i 's fiscal fourth quarter and set equal to 0 otherwise; $\mu_{i,q}$ = error term for firm i at quarter q ; $i = 1, \dots, N$, firm index; and $q = 1, \dots, Q_i$, quarter index for the quarters included in the estimation period for firm i (Q_i ranges from 9 to 55 quarters).¹⁵

The model is estimated using the longest time series of observations available prior to quarter t-1 for each firm. Prior year total assets are used as a deflator to reduce heteroscedasticity.¹⁶ Coefficient estimates obtained from the above regression are used to calculate $DQACC_{i,t}$, the prediction error, as follows:¹⁷

$$DQACC_{i,t} = QACC_{i,t}/TA_{i,t-4} - (a_i[1/TA_{i,t-4}] + b_{1i}[(CHGREV_{i,t} - CHGAR_{i,t})/TA_{i,t-4}] + b_{2i}[GPPE_{i,t}/TA_{i,t-4}] + b_{3i}[FDIFF_{i,t-1}/TA_{i,t-4}] + b_{4i}FOURQ_{i,t})$$

In order to test the significance of $DQACC_{i,t}$, it must be standardized (see Patell, 1976 or Theil, 1971). The $DQACC$ for each firm is divided by its estimated standard deviation.¹⁸ This standardized $DQACC_{i,t}$ has a Student's t distribution with Q_i-5 degrees of freedom and a variance of $(Q_i-5)/(Q_i-7)$.¹⁹

The discretionary accrual model used in this study differs from the model used by Jones (1991). Quarterly data are used in this study, while Jones (1991) used annual data. The model used in this study also includes several variables ($CHGAR$, $FDIFF$, and $FOURQ$) that do not appear in the Jones (1991) model. The purpose of $CHGAR$ is to address a problem with the Jones model. Dechow, Sloan, and Sweeney (1995) state that a major problem with the Jones model is that it does not allow for managerial discretion over sales revenue; therefore, they modify the model by adjusting sales in the event period for changes in accounts receivable. In this study, sales is adjusted for changes in accounts receivable ($CHGAR$) throughout the estimation period as well as the event period to maintain consistency between the two periods.²⁰

This study includes two additional independent variables: $FDIFF$ and $FOURQ$. The purpose of $FDIFF$ is to control for the tendency of increases (decreases) in accruals in one period to be followed by decreases (increases) in accruals in a subsequent period. The purpose of $FOURQ$ is to control for the effect of the fourth fiscal quarter on the discretionary accrual. The assumption is made that managerial discretion over earnings reported in the fiscal fourth quarter is affected by managerial bonus plans and auditor scrutiny.

The average R-squared for the 124 estimation period multiple regressions run for the target and nontarget firms (48 targets and 76 nontargets) is 0.527. The average adjusted R-squared is 0.354. Jones (1991) reports an average R-squared of 0.232. The average R-squared obtained in this study is higher than that obtained by Jones because this study uses quarterly data instead of annual data and includes three additional independent variables in the estimation period regressions.

Table 4 reports descriptive statistics related to the independent variables in the estimation period regressions. Average t -statistics are calculated using the absolute value of each individual t -statistic. These t -statistics are biased to-

Table 4
Descriptive Statistics for the 124 Estimation Period Regressions
Included in the Modified Jones Approach

Variable	Mean Coefficient	Mean t-statistic ^a	Number of Coefficients Significant at the Following Levels		
			1%	5%	10%
Intercept	-31.4	0.84	3	5	11
CHGREV-CHGAR	-0.248	2.02	33	43	52
GPPE	0.045	1.01	6	18	25
FDIFF	0.042	1.06	7	13	20
FOURQ	-0.011	1.52	22	34	39

^aComputed using the absolute value of each individual t-statistic.

wards 0 due to the presence of multicollinearity. This multicollinearity, however, does not affect the results of this study because the model is used to obtain an estimate of NQACC.

According to the statistics shown in Table 4, the independent variable that is significant in the greatest number of regressions is (CHGREV-CHGAR). The average coefficient for (CHGREV-CHGAR) is -0.248. The average t-statistic for (CHGREV-CHGAR) is 2.02 and it is significant at the 10% level in 52 of the 124 regressions. Although the expected sign for GPPE is negative because property, plant and equipment is related to an income-decreasing accrual (depreciation expense), in this study, the average coefficient for GPPE is positive (0.045). GPPE is significant at the 10% level in 25 of the regressions. The expected sign for FDIFF is negative because of the accrual reversal effect. In this study, however, the sign of the average coefficient for FDIFF is positive (0.042). FDIFF is significant at the 10% level in 20 of the 125 regressions. What the expected sign for FOURQ should be is not obvious. The average coefficient for FOURQ is -0.011 and it is significant at the 10% level in 39 of the regressions.

4. The DeAngelo Approach to Estimating the Discretionary Accrual

The second approach to estimating the

discretionary accrual, a special case of an ARIMA model, is based on a simple random walk model that allows for seasonality in the data. The unmanaged or "normal" accrual is assumed to be the actual prior-year accrual. $NQACC_{i,t}$, therefore, is set equal to $QACC_{i,t-4}$. A problem with this approach is that it assumes that the nondiscretionary accrual is constant over time and does not vary in response to economic conditions. This approach, known as the DeAngelo approach, has been used by DeAngelo (1986), Liberty and Zimmerman (1986), DeAngelo (1988), and Healy and Palepu (1990).

One of the advantages of the DeAngelo approach is that fewer observations are needed to compute the discretionary accrual than are needed to compute the discretionary accrual based on the modified Jones approach. Fewer firms, therefore, are dropped from the initial sample of 166 target firms due to missing observations. Moreover, the results of tests based on the DeAngelo discretionary accrual can be compared with the results of prior studies that use this method. The standardized DeAngelo discretionary accrual, hereafter referred to as the DeAngelo $DQACC_{i,t}$, is computed as follows:

$$DQACC_{i,t} = [QACC_{i,t} - QACC_{i,t-4}] / \text{TOTAL ASSETS}_{i,t-4}$$

The DeAngelo $DQACC_{i,t}$ is calculated

for 92 takeover targets at quarter t and 101 takeover targets at quarter t-1. It is also calculated for each nontarget control firm for the quarter closest in calendar time to the quarter t (or t-1) of its matched target firm. In cases where more than one matched control firm is obtained for a particular target firm, the mean DQACC for the matched control firms is used.

Empirical Results

Comparison of All Takeover Targets to All Nontargets

The first approach to testing for earnings

management among targets of takeovers compares the discretionary accruals of the takeover targets to those of a control group of nontargets. A bivariate test is used to test the following hypothesis:

$$H_0: \text{mean DQACC}_{\text{TARG}} \leq \text{mean DQACC}_{\text{NONTARG}};$$

$$H_A: \text{mean DQACC}_{\text{TARG}} > \text{mean DQACC}_{\text{NONTARG}}.$$

The results of the bivariate tests for quarter t are reported in Table 5. Panel A of Table 5 presents results using the modified Jones approach to estimating DQACC. Panel B presents results using the DeAngelo approach to estimating DQACC.

Table 5
Bivariate Results for Quarter t Using Both the Modified Jones and DeAngelo Approaches to Computing the Discretionary Accrual

Mean	Median	N	Mean	Median	N	t-statistic (Wilcoxon Z) for difference in: ^{a,b}	
Panel A. The Modified Jones Approach							
All takeover targets			Control group of nontargets			Mean	Median
0.0035	0.0024	42	-0.0065	-0.0041	42	0.47 (0.6408)	0.60 (0.5459)
Hostile takeover targets			Control group of nontargets			Mean	Median
-0.0011	0.0047	19	-0.0012	-0.0030	19	-0.55 (0.5847)	0.00 (0.9999)
Friendly takeover targets			Control group of nontargets			Mean	Median
0.0072	0.0013	23	-0.0108	-0.0109	23	1.16 (0.2531)	0.83 (0.4038)
Panel B. The DeAngelo Approach							
All takeover targets			Control group of nontargets			Mean	Median
0.0065	0.0010	92	-0.0061	-0.0003	92	1.54 (0.1252)	0.79 (0.4277)
Hostile takeover targets			Control group of nontargets			Mean	Median
0.0066	-0.0027	41	-0.0016	0.0035	41	0.91 (0.3646)	0.33 (0.7385)
Friendly takeover targets			Control group of nontargets			Mean	Median
0.0065	0.0018	51	-0.0097	-0.0005	51	1.25 (0.2146)	0.60 (0.5469)

^ap-values are in parentheses.

^bTest results are based on standardized measures of the modified Jones discretionary accrual.

All modified Jones DQACC's presented in the tables are not standardized; however, all test results presented in the tables are computed using standardized modified Jones DQACC's.

The results reported in Table 5 do not provide support for the hypothesis that managers faced with the threat of a takeover systematically adopt income-increasing accruals during the quarter immediately following initiation (quarter t). Both the modified Jones DQACC (mean = 0.0035) and the DeAngelo DQACC (mean = 0.0065) for the takeover targets are positive and greater than the modified Jones and DeAngelo DQACC's for the control group (means =

-0.0065 and -0.0061, respectively). Differences between the two groups, however, are not statistically significant.

Table 6 presents results for quarter t-1. In sharp contrast to the quarter t results reported in Table 5, results reported in Table 6 provide support for the hypothesis that managers of firms that are targets of takeover attempts systematically increase earnings during the quarter immediately preceding initiation. Panel A of Table 6 presents results using the modified Jones approach to estimating DQACC. The modified Jones DQACC for the takeover targets is greater than and significantly different from the modified

Table 6
Bivariate Results for Quarter t-1 Using Both the Modified Jones and DeAngelo Approaches to Computing the Discretionary Accrual

Mean	Median	N	Mean	Median	N	t-statistic (Wilcoxon Z) for difference in: ^{a,b}	
Panel A. The Modified Jones Approach							
All takeover targets			Control group of nontargets			Mean	Median
0.0028	0.0063	47	-0.0179	-0.0095	47	2.29 (0.0246)	1.88 (0.0597)
Hostile takeover targets			Control group of nontargets			Mean	Median
0.0033	0.0080	26	-0.0201	-0.0101	26	1.94 (0.0580)	1.73 (0.0837)
Friendly takeover targets			Control group of nontargets			Mean	Median
0.0021	-0.0072	21	-0.0151	-0.0095	21	1.23 (0.2250)	0.65 (0.5131)
Panel B. The DeAngelo Approach							
All takeover targets			Control group of nontargets			Mean	Median
0.0049	0.0020	101	-0.0102	-0.0097	101	1.94 (0.0538)	2.08 (0.0373)
Hostile takeover targets			Control group of nontargets			Mean	Median
0.0072	0.0021	52	-0.0151	-0.0088	52	2.29 (0.0242)	2.35 (0.0188)
Friendly takeover targets			Control group of nontargets			Mean	Median
0.0024	0.0018	49	-0.0050	-0.0103	49	0.60 (0.5480)	0.64 (0.5225)

^ap-values are in parentheses.

^bTest results are based on standardized measures of the modified Jones discretionary accrual.

Jones DQACC for the control group of nontargets (t-statistic = 2.29, Wilcoxon Z = 1.88). In addition, the mean and median modified Jones DQACC's for the takeover targets are income-increasing (0.0028 and 0.0063, respectively), while the mean and median modified Jones DQACC's for the nontargets are income-decreasing (-0.0179 and -0.0095, respectively).

Panel B of Table 6 presents results for quarter t-1 using the DeAngelo approach to estimating DQACC. Once again, the DeAngelo DQACC for the takeover targets is greater than and significantly different from the DeAngelo DQACC for the control group of nontargets (t-statistic = 1.94, Wilcoxon Z = 2.08). In addition, the mean and median DeAngelo DQACC's for the takeover targets are income-increasing (0.0049 and 0.0020, respectively), while those for the control group of nontargets are income-decreasing (-0.0102 and -0.0097, respectively).

Comparison of Hostile and Friendly Takeover Targets to their Matched Nontargets

If managers of firms that are targets of hostile takeovers have greater incentives to manage reported earnings, then splitting the sample between hostile and friendly takeover targets will produce stronger results. Thus, the second approach to testing for earnings management among targets of takeovers involves testing the following hypotheses:

$$H_0: \text{mean DQACC}_{\text{HOSTARG}} \leq \text{mean DQACC}_{\text{NONTARG}}$$

$$H_A: \text{mean DQACC}_{\text{HOSTARG}} > \text{mean DQACC}_{\text{NONTARG}}$$

$$H_0: \text{mean DQACC}_{\text{FRNTARG}} \leq \text{mean DQACC}_{\text{NONTARG}}$$

$$H_A: \text{mean DQACC}_{\text{FRNTARG}} > \text{mean DQACC}_{\text{NONTARG}}$$

The quarter t results reported in Table 5 for the modified Jones DQACC (Panel A) and the DeAngelo DQACC (Panel B) show no statistically significant difference between (1) the discretionary accruals of hostile targets and their matched nontargets and (2) the discretionary accruals of friendly targets and their matched non-

targets. In all cases, however, the mean DQACC's for the target firms are greater than the mean DQACC's for the nontarget firms. These results, therefore, are similar to the results obtained in the previous section.

In contrast to the quarter t results, the quarter t-1 results presented in Table 6 provide support for the hypothesis that managers of hostile takeover targets adopt income-increasing accruals during the quarter ended prior to initiation. The results presented in Panel A for the modified Jones approach to estimating DQACC indicate that DQACC for the hostile takeover targets is positive (mean = 0.0033) and significantly different from the DQACC for the nontargets (mean = -0.0201). This difference is significant at the 10% level (t-statistic = 1.94, Wilcoxon Z = 1.73). The results presented in Panel A, however, for the friendly takeover targets show that the modified Jones DQACC for the friendly targets is greater than, but not significantly different from, the modified Jones DQACC for the matched sample of nontargets.

The results presented in Panel B of Table 6 are consistent with those in Panel A of Table 6. At quarter t-1, the DeAngelo DQACC for the hostile takeover targets is positive (mean = 0.0072) and significantly different from the DeAngelo DQACC for the matched nontargets (mean = -0.0151). This difference is significant at the 5% level (t-statistic = 2.29, Wilcoxon Z = 2.35). The DeAngelo DQACC for the friendly takeover targets is positive (mean = 0.0024) but not significantly different from the DeAngelo DQACC for the control group of nontargets (mean = -0.0050).

Discussion of Relationship between Firm Performance and Partitioning Scheme

Dechow, Sloan and Sweeney (1995) evaluate different methods for computing the discretionary accrual. They partition a random sample of firms based on earnings performance (measured as earnings before extraordinary items and discontinued operations divided by lagged total assets) and find that discretionary accruals

tend to be high (low) when earnings are high (low). Likewise, they find that tests for earnings management tend to reject the null of no earnings management in samples of firms with extreme earnings performance even when no earnings management is expected. Based on their results, if the partitioning scheme used in this study (i.e., target vs. nontarget) is correlated with earnings performance then tests for earnings management will be misspecified.

The Dechow, Sloan and Sweeney results suggest that firms with high discretionary accruals typically have high earnings. This study finds that hostile takeover targets have high discretionary accruals; however, looking back at Table 2, row 2, it can be ascertained that takeover targets tend to have lower return on assets than their matched control firms. Results of the Wilcoxon Rank Sum test indicate that this difference is significant at the 5% level for the hostile takeover targets and their matched firms. The t-test results, however, are not statistically significant. Although the partitioning scheme in this study is correlated with firm performance, this correlation would tend to bias the results against finding support for the hypothesis that targets of takeovers adopt income-increasing accruals.

Summary and Conclusions

This study tests the hypothesis that managers of firms that are targets of takeovers systematically adopt income-increasing accounting accruals during the quarters immediately preceding and following initiation of the takeover attempt. The adoption of income-increasing accounting procedures and accruals is viewed as a takeover defense. Managers faced with the threat of a takeover have incentives to increase reported earnings to convince shareholders that managers are performing efficiently and, thus, avoid losing their jobs. If shareholders believe managers are performing efficiently, they (the shareholders) will not tender their shares. In addition, to the extent that increasing reported earnings increases the pre-offer market price or the offer price that shareholders require from the bidder, an increase in reported earnings will lead

to an increase in the takeover premium required and, thus, discourage the bidder.

Discretionary quarterly accruals are computed for a sample of 110 firms that were targets of tender offers between 1985 and 1989, inclusive, and for a matched sample of nontargets. Two methods are used to estimate the discretionary accrual. These methods include a modified version of the approach used by Jones (1991) and the DeAngelo approach, which assumes that nondiscretionary accruals follow a random walk (DeAngelo, 1986, 1988). All tests are conducted using both discretionary accrual measures.

In addition to using two measures of the discretionary accrual, two approaches are taken to testing for earnings management among targets of takeovers. The first approach consists of a bivariate test to compare the discretionary accruals of all takeover targets to those of the matched sample of nontargets. The empirical results indicate that managers of firms that are targets of takeovers systematically adopt income-increasing accruals during the quarter ended prior to initiation of the takeover attempt but not during the quarter ended subsequent to initiation of the takeover attempt. An explanation for this may be that managers believe it is too late to benefit from adopting income-increasing accruals at the end of the first quarter subsequent to initiation.

The second approach to testing for earnings management consists of splitting the sample between hostile and friendly takeover targets and examining the discretionary accruals of these two groups separately. The results of these bivariate tests indicate that the results obtained for the takeover target sample as a whole are primarily due to the hostile takeover targets. The tests provide support for the hypothesis that managers of firms that are targets of hostile takeovers systematically adopt income-increasing accruals during the quarter ended prior to initiation of the takeover attempt. No evidence is found that managers of firms that are targets of friendly takeovers systematically adopt income-increasing

accruals. These findings are consistent with the argument that managers of firms that are targets of hostile takeovers have greater incentives to manage reported earnings.

Suggestions for Future Research

By providing evidence that managers of firms faced with the threat of a hostile takeover adopt income-increasing accruals, this study adds to the literature which attempts to explain managers' accounting choices. A situation in which earnings management is likely to occur has been identified and support is provided for the contention that studies which examine accounting choices made by takeover targets should distinguish between hostile and friendly takeover targets. Further research can be conducted to determine whether earnings management during takeover attempts diminishes the usefulness or "quality" of accounting information.

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Endnotes

1. These studies include: Watts and Zimmerman (1978); Hagerman and Zmijewski (1979); Zmijewski and Hagerman (1981); Dhaliwal, Salamon, and Smith (1982); Lilien and Pastena (1982); Healy (1985); and many others.
2. These events include: management buyouts (DeAngelo, 1986); labor union contract negotiations (Liberty and Zimmerman, 1986); proxy contests (DeAngelo, 1988); import relief investigations (Jones, 1991); and antitrust investigations (Cahan, 1992).
3. See, for example, Dann and DeAngelo (1983), Jarrell and Poulsen (1987), Malatesta and Walkling (1988), and Ryngaert (1988).
4. For a review of additional studies of accounting method choice, see Watts and Zimmerman (1986) and Watts and Zimmerman (1990).
5. Using a modification of Healy's (1985) accrual approach, Jones (1991) and Cahan (1992) are also able to find evidence in support of earnings management. They test for earnings management during import relief investigations and antitrust investigations, respectively.
6. Slovin, Sushka, and Bendeck (1991), for example, find that bids to take firms private result in statistically significant positive excess returns for nontarget firms in the same industry. One reason for this positive return to nontarget firms is that the likelihood of becoming a takeover target increases after a going-private bid occurs in the industry.
7. Financial companies include banks, savings and loans, insurance companies, investment firms, and real estate firms.
8. This includes reports such as the following: 1) the bidder expressed interest in acquiring the firm; 2) the bidder made a tender offer; 3) the target firm put itself up for sale and sought an acquirer; or 4) a manager or investment group wished to take the firm private.
9. In cases where a hostile takeover attempt turned friendly and no earnings announcement was made prior to the change in mood, completion is the same as completion for a friendly takeover attempt.
10. Depending on when a firm reports quarterly earnings, the third calendar quarter ends in either August, September or October.
11. *Wall Street Journal* articles related to this firm state that, at the time of the takeover attempt, the firm was indicted by the federal government for fraud.
12. When more than one matched control firm is obtained for a target firm, an average for the control firms is used in statistical tests that compare the target firm to its match.
13. See Schipper (1989) for a discussion of various methods used to measure the portion of reported earnings that is managed.
14. The modified Jones approach is used to es-

timite DQACC for 76 nontarget firms. The modified Jones DQACC is calculated for each nontarget firm for the quarter closest in calendar time to the quarter t (or $t-1$) of its matched target firm. In cases where more than one matched nontarget firm is obtained for a particular target firm, the mean DQACC for the matched nontarget firms is used.

15. Although firm i must have a minimum of 10 quarterly accruals prior to quarter $t-1$ to be included in the modified Jones approach, Q_i may be less than 10 due to missing observations for FDIFF.
16. Current quarter total assets are also used as a deflator. The regression results are not qualitatively different from those using prior year total assets.
17. The same procedure is used to compute the unexpected accrual at quarter $t-1$.
18. The variance of each DQACC is computed using a formula derived by Theil (1971, pp. 122-123). This formula is expressed as follows: $s^2[X_p(X'X)^{-1}X_p' + I]$ where X_p is the matrix of independent variables for the prediction period, X is the matrix of independent variables for the estimation period, and I is the identity matrix. The standard deviation of the estimation period residuals is used as an estimate of s .
19. See page 82 of Theil (1971).
20. The results are not qualitatively different from those reported in this paper if, consistent with Dechow, Sloan and Sweeney (1995), the discretionary accrual is estimated using CHGAR in the event period only.

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