

Earnings Management in Healthy Firms

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Earnings management is a frequent subject of positive accounting research because of its importance to a wide range of constituencies. This study uses a multivariate regression analysis to examine the determinants of earnings management in 161 healthy firms. Healthy firms are defined as those that did not experience a loss for five years in a row.

Most studies in positive accounting research examine samples of firms that include both healthy and financially distressed firms. These studies assume implicitly that contracting incentives have the same effect on the accounting choices of distressed firms as those of healthy firms and that the marginal cost of managing earnings is the same for both types of firms. This paper, however, focuses on healthy firms only.

The results provided in this paper indicate that the closer a healthy firm is to violating its debt covenant restrictions, the more likely its managers will make income-increasing accounting choices. Healthy firms also have incentives to adopt income-decreasing accounting choices when involved in labor negotiations with their unions. The results do not support earnings management due to government lobbying or top executive changes. These results suggest that, for healthy firms, the benefits from these types of earnings management are too low to influence managers' accounting choices.

Introduction

Positive accounting research relies on agency theory to explain and predict accounting choices of managers. The incentives of the contracting parties affect accounting choices because accounting numbers often are used in contracts or serve as monitoring mechanisms. This paper examines the determinants of earnings management in 161 healthy firms.

Most studies in positive accounting research examine samples of firms that include both healthy and financially distressed firms (Skinner, 1993; Pouchiau, 1993; Healy, 1985; Watts and Zimmerman, 1978). These studies assume implicitly that contracting incentives have the same effect on the accounting choices of distressed

firms as those of healthy firms and that the marginal cost of manipulating income is the same for both types of firms. Studies using samples partitioned according to the firm's financial condition recently have emerged that suggest that different incentives affect accounting choices in financially distressed firms. For example, DeAngelo, DeAngelo, and Skinner (1994) provide evidence that suggests that debt covenant violation may not be an incentive driving accounting choices of troubled firms' managers. Further, Peltier-Rivest (1999) shows that managers of troubled firms with binding debt covenants do not adopt income-increasing accounting choices. Finally, Murphy and Zimmerman (1993) demonstrate that incoming CEOs deflate earnings only when poor financial performance precedes the year of replacement. No studies in the literature have investigated earnings management incentives for an exclusive sample of healthy firms.

Further, papers that investigate the accounting choice determinants of healthy and distressed firms in a single sample analyze only one determinant at a time, thus not controlling for correlated explanatory factors. Those studies do not employ sophisticated accrual expectation models to measure discretionary accruals, whereas this paper uses both a modified version of Jones' (1991) model, as developed by Dechow, Sloan, and Sweeney (1995), and Hunt, Moyer, and Shevlin's (1996) model to measure unexpected accruals.

This paper contributes to the accounting literature by providing an analysis of the determinants of accounting choices for an exclusive sample of healthy firms. By using a multivariate regression analysis, this research provides evidence about the various incentives and trade-offs that managers face when making accounting choices. This issue is important to avoid making inappropriate generalizations from studies that include both healthy and distressed firms in the same sample.

This paper also contributes to public accounting by providing auditors with information that may be used in auditing healthy firms' financial statements. Auditors have imperfect information about a specific firm's earnings components in the absence of earnings management, leaving managers with some discretion in making accounting adjustments.

This study also benefits financial statements users by providing them with information that may be used in processing the financial information of healthy firms. Investors, creditors, financial analysts, governments, unions, and others make decisions based partly on financial statements and, therefore, must take into consideration managers' incentives to manage earnings.

Overall, the results obtained in this paper suggest that the closer a healthy firm is to violating its debt covenant restrictions, the more likely its managers will make income-increasing accounting choices to prevent such violation. Further, when a healthy firm is involved in contract negotiations with its labor union, its managers are more likely to make income-decreasing accounting choices to obtain labor concessions. Management change and government lobbying income-decreasing

hypotheses, however, are not supported in this paper. This suggests that, for healthy firms, earnings management's benefits may be too small to influence managers' behavior in these two cases.

Literature Review and Hypotheses

This section reviews the accounting choice literature on mixed¹ and troubled samples of firms.

Debt Covenant

The first earnings management incentive investigated in this study is the firm's closeness to violating its debt covenant restrictions. The literature about the effect of debt covenant restrictions on mixed samples of firms shows that the closer a firm is to violating its debt covenant restrictions, the more likely its manager will adopt income-increasing accounting choices. [See Christie (1990) and Skinner (1993) for a summary of the evidence on this issue.] Healy and Palepu (1990), however, find no evidence of earnings management for firms with binding debt covenants, whereas DeFond and Jiambalvo (1994) and Sweeney (1994) find that managers of firms reporting debt covenant violations in their annual report adopt income-increasing accounting choices in the years prior to the violation. These contradictory results could be potentially explained by the use of mixed samples of firms (i.e., not exclusively healthy or troubled). In this case, benefits from managing earnings upwards may be present for healthy firms only, thus calling for the use of pure samples of firms when conducting accounting research.

DeAngelo *et al.* (1994), and Peltier-Rivest (1999) do use an exclusive sample of troubled firms. Both studies show that there are no significant differences across firms with and without binding debt covenants.

The debt covenant hypothesis predicts that when a healthy firm is close to violating an accounting-based debt covenant restriction, its managers are expected to make income-increasing accounting choices to relax the debt covenant restriction and lower the expected costs of technical default (e.g., renegotiation costs, bankruptcy costs). The formal hypothesis is (stated in the alternative form):

H₁: The closer a healthy firm is to violating its debt covenant restrictions, the more likely its managers will make income-increasing accounting choices.

¹ *Mixed samples of firms* refers to samples that include both healthy and distressed firms. These samples are random with respect to the financial conditions of the firms included in them. These samples, however, also meet some selection criteria (i.e., they are not purely random). This terminology will be used throughout this paper.

Government Lobbying

The traditional political sensitivity hypothesis states that the use of reported profits by politicians and regulators provides managers of firms facing higher political costs with an incentive to adopt income-decreasing accounting procedures. Size usually is used to proxy for political sensitivity because it is hypothesized that larger firms are more politically sensitive than smaller ones (Watts and Zimmerman, 1986). Empirical tests on mixed sample of firms generally support the hypothesis that larger firms are more likely to adopt income-decreasing procedures than smaller firms (Watts and Zimmerman, 1990). The size proxy, however, is a crude and indirect measure of political sensitivity and may proxy for other factors.

Alternative proxies recently have been used to measure political costs. These new proxies attempt to directly measure political costs by identifying firms that are under governmental scrutiny. For example, Jones (1991) examines whether firms that would benefit from import relief (via tariff increases or quota reductions) attempt to decrease earnings during import relief investigations by the United States International Trade Commission (ITC). The results show significant negative discretionary accruals for the year of the import relief investigation, but insignificant accruals for the year before the petition was filed. Cahan (1992) investigates firms that are under monopoly-related antitrust investigations by the Department of Justice (DOJ) or the Federal Trade Commission (FTC). Cahan (1992) finds that those firms make income-decreasing discretionary accruals while being investigated.

While Jones' (1991) sample comprises firms that could potentially be in financial distress (because they lobby for import relief legislation), her sample may also include healthy firms that seek to improve their financial results. On the other hand, Cahan's (1992) sample also may include some distressed firms.

The government lobbying hypothesis predicts that when a healthy firm is subject to import relief investigations or is engaged in any other form of lobbying with the local or federal government (e.g., seeking anti-trust clearance or being investigated on the basis of antitrust laws by the FTC or DOJ), its managers are more likely to adopt income-decreasing accounting choices (Jones, 1991; Cahan, 1992). Lower income (or lower accounting rate of return) is believed to increase the chances of getting some kind of governmental assistance, or increase the probability of receiving a favorable judgment (or a lighter penalty) in the case of antitrust violations, because governments explicitly (or implicitly) use accounting numbers in reaching a decision (Cahan, 1992). Moreover, Jones (1991) reports that government agencies do not adjust financial data for accounting procedures or accruals made by firms' managers. Government agencies, such as the ITC, usually request a firm's financial information for five years prior to the date the petition was filed. Managers are unlikely, however, to prepare for the governmental investigation and manage earnings prior to the year before the petition is filed. The formal hypothesis is (stated in the alternative form):

H₂: When a healthy firm is involved in a governmental investigation (import relief or anti-trust), its managers are more likely to make income-decreasing accounting choices in the year before the petition was filed and in each year prior to the investigation's completion.

Management Change

Management change studies indicate that management turnover is more prevalent in financially distressed firms than in healthy ones (Gilson, 1989; Weisbach, 1988; Coughlan and Schmidt, 1985).

Pourciau (1993) and DeAngelo (1988) examine firms experiencing top executive changes. While such management changes are usually associated with financial distress, some may occur in healthy firms too. Pourciau (1993) investigates non-routine executive changes (such as resignations) because their environments provide more incentives for earnings management, as opposed to routine changes (such as retirements). Her results indicate that incoming executives adopt income-decreasing accruals in the year of the executive change. Departing executives, however, do not adopt income-increasing accruals in the year before the management change. DeAngelo (1988) analyzes proxy contest-induced management changes and finds that the new management takes an earnings bath after a successful proxy contest.

On the other hand, Murphy and Zimmerman (1993) control for firm performance and find evidence that new CEOs adopt income-decreasing discretionary accruals in the year of replacement when poor performance precedes the CEO change. In strongly performing firms and in firms for which the CEO retires as part of the normal succession process, the authors find no significant earnings management. Peltier-Rivest (1999) examines an explicit sample of troubled firms and also finds that new top executives make income-decreasing accounting choices in the year of replacement. Overall, these results provide evidence of the importance of examining separately healthy and troubled firms.

The management change hypothesis predicts that when a healthy firm is going through a nonroutine change of top executive (CEO, president, or chairman), the incoming CEO is more likely to adopt income-decreasing accounting choices (Pourciau, 1993; Murphy and Zimmerman, 1993; DeAngelo, 1988). It is hypothesized that in the case of resignations, the departing and the incoming executives have diverging interests. Therefore, the new executive is expected to adopt income-decreasing accruals in the year of the change to blame prior management for the reduced financial performance and get the credit for the future improved performance of the firm. The formal hypothesis is (stated in the alternative form):

H₃: When a healthy firm experiences a nonroutine change of top executive, the incoming executive is more likely to make income-decreasing accounting choices in the year of the change.

Union Negotiations

Labor unions rely implicitly on accounting numbers when negotiating with the firm's management, thus providing an incentive for managers to manipulate earnings during labor talks. Liberty and Zimmerman (1986) analyze a mixed sample of firms and fail to provide evidence consistent with managers depressing earnings during, or immediately preceding, labor talks. DeAngelo and DeAngelo (1991), however, do find that managers adopt income-decreasing accruals when negotiating major concessions from labor unions. Their sample, which is not explicitly troubled, comprises the seven largest domestic steel producers during a period in which they sustained losses and negotiated concessions from unionized labor. On the other hand, Peltier-Rivest (1999) analyzes an explicit sample of financially distressed firms (i.e., firms with three consecutive net losses accompanied by a dividend reduction) and does not find any evidence that troubled firms manage earnings when involved in labor negotiations.

Results from the above studies may be contradictory due to the different samples used in each study. Managing earnings during union negotiations may provide larger benefits for healthy firms as compared to troubled firms.

The union negotiation hypothesis predicts that when a healthy firm is engaged in labor negotiations with its union, its managers are more likely to adopt income-decreasing accounting choices because labor unions rely implicitly on accounting numbers (DeAngelo and DeAngelo, 1991). It is believed that lower profits increase the chances of obtaining labor concessions (e.g., lower wage increases, reduced benefits) from the union. Management has incentives to obtain labor concessions in order to minimize expenses and maximize profits. It is hypothesized that managers manipulate earnings in the year preceding the beginning of the labor negotiations and in any year during which a labor agreement was not reached yet (when labor talks span two financial years). The formal hypothesis is (stated in the alternative form):

H₄: When a healthy firm is involved in contract negotiations with its labor union, its managers are more likely to make income-decreasing accounting choices in the year preceding and in each year during which the negotiations continue.

Methodology

Sample Selection and Data Sources

The sample is selected from firms with sufficient data available on Standard & Poor's Compustat annual expanded industrial, Compustat annual full coverage, and Compustat annual research databases. In order to be considered as healthy and selected in the sample, firms must report non-negative net income (or non-negative pre-tax operating income) for the five-year period beginning three years prior to the

event year through the year following the event year. Event years span from 1986 through 1994. Utility and financial firms are excluded from the sample because contract incentives probably differ for these firms due to their highly regulated environments. Finally, firms that merged, were acquired, or went private in the event year or the following year also are excluded from the sample because their managers may have faced different contract incentives.

Annual reports, 10-K reports, and *The Wall Street Journal Index* were used to identify the years during which sample firms engaged in union negotiations, sought government assistance, and/or had a top executive change.

Regression Model

The hypotheses of interest in this paper are tested using a multivariate cross-sectional regression analysis to control for the potential confounding effects of other explanatory variables. Discretionary accruals for the event year (i.e., year 0) are regressed on the following set of explanatory variables. (The predicted signs are indicated in the model.)

$$(1) DA_{it} = a + b_1 \frac{DEBT_{it}}{EQUITY_{it}} - b_2 GOV_{it} - b_3 CEO_{it} - b_4 UNION_{it} + \varepsilon_{it}$$

where:

DA_{it} = The level of discretionary accruals in year $t = 0$ for firm i , where positive (negative) DA represents income-increasing (decreasing) accruals (per equations 3 and 5);

$DEBT_{it}$ = The beginning-of-year long-term debt in year $t = 0$ for firm i ;

$EQUITY_{it}$ = The beginning-of-year shareholders' equity in year $t = 0$ for firm i ;

GOV_{it} = The government lobbying dummy variable in year $t = 0$ for firm i , where 1 = investigation or pre-investigation and 0 = no investigation;

CEO_{it} = The management change dummy variable in year $t = 0$ for firm i where 1 = change and 0 = no change,

$UNION_{it}$ = The union negotiation dummy variable in year $t = 0$ for firm i where 1 = negotiations or pre-negotiations and 0 = no negotiations; and

ε_{it} = The error term in year $t = 0$ for firm i .

Dependent Variable

The measure of accounting choices analyzed in this paper is discretionary accounting accruals because accrual management is believed to be more costly to detect and undo than switches in accounting methods.² Moreover, accrual manipula-

² The income effect of adopting a new accounting principle must be disclosed in the financial statement's footnotes, whereas the effect of changes in accounting estimates (or any other accrual) need not be disclosed (Wolk, Francis, and Tearey, 1992). Accounting write-offs, depending on the situation, may be easy to detect when presented as special items on the income statement.

tion is a less costly means of transferring earnings between periods than changes in accounting methods (Healy, 1985). Furthermore, there is no valid measure of the discretionary portion of accounting method switches when the contracting and feasible reporting sets both change over time in response to economic and institutional pressures (Schipper, 1989).

Accounting accruals are analyzed in an aggregate fashion, as opposed to examining each accrual individually, as managers are likely to manage any accrual and it is difficult to determine which specific accruals are managed. Moreover, managers should be more concerned with the overall effect accruals have on earnings than with each individual effect (McNichols and Wilson, 1988). More specifically, *non-current accruals* and *total accruals* are analyzed in this paper. *Non-current accruals* are defined as net income minus working capital from operations,³ thus excluding changes in working capital accounts (e.g., accounts receivable, inventory, accounts payable) from the measure of accruals. On the other hand, *total accruals* are defined as net income minus cash flows from operations, thus including changes in working capital accounts.⁴

First, to control for the effect of the firm's economic performance on the level of *non-current accruals*, Hunt *et al.*'s (1996) non-current accrual model is used:

$$(2) \text{NCA}_{it} / \text{A}_{it-1} = \alpha_i + \beta_{1i} [\text{PPE}_{it} / \text{A}_{it-1}] + \beta_{2i} [\text{INTG}_{it} / \text{A}_{it-1}] + \beta_{3i} [\text{NCA}_{it-1} / \text{A}_{it-1}] + \varepsilon_{it}$$

where:

- NCA_{it} = Non-current accruals in year t for firm i ;
- PPE_{it} = Gross property, plant, and equipment in year t for firm i ;
- INTG_{it} = Intangibles in year t for firm i ;
- NCA_{it-1} = Non-current-accruals in year $t-1$ for firm i ;
- A_{it-1} = Total assets in year $t-1$ for firm i , and
- ε_{it} = The error term in year t for firm i .

³ Working capital from operations is measured as Compustat Item 110, funds from operations, for firms not reporting a Statement of Cash Flows (prior to FASB #95). For firms reporting a Statement of Cash Flows (FASB #95), working capital from operations is measured as Compustat Item 123, income before extraordinary items, plus Item 125, depreciation and amortization, plus Item 124, extraordinary items and discontinued operations, plus Item 126, deferred taxes, plus Item 106, equity in net loss (earnings), plus Item 213, sale of property, plant, equipment, and investments—loss (gain), plus Item 217, other funds from operations.

⁴ Cash flows from operations is measured as Compustat Item 308, operating activities -- net cash flow, for firms reporting a Statement of Cash Flows (FASB #95). For firms not reporting a Statement of Cash Flows (prior to FASB #95), cash flows from operations is defined as Compustat Item 110, funds from operations, minus the change in Item 2, accounts receivable, minus the change in Item 3, inventories, minus the change in Item 68, other current assets, plus the change in item 70, accounts payable, plus the change in Item 71, taxes payable, plus the change in Item 72, other current liabilities.

Non-current discretionary accruals are simply defined as non-current accruals scaled by previous period total assets minus the level of nondiscretionary accruals predicted when using the above model's parameters (equation 2):

$$(3) \quad \text{NCDA}_{it}/A_{it-1} = \text{NCA}_{it}/A_{it-1} - \alpha_i - \beta_{1i} \left[\text{PPE}_{it}/A_{it-1} \right] - \beta_{2i} \left[\text{NTG}_{it}/A_{it-1} \right] - \beta_{3i} \left[\text{NCA}_{it-1}/A_{it-1} \right]$$

where:

NCDA_{it} = The level of non-current discretionary accruals for firm i in year $t = 0$ (i.e., the event year).

The other variables are defined as in equation (2) above.

Second, a modified version of Jones' (1991) accrual model (Dechow *et al.*, 1995) is used for *total accruals*. Dechow *et al.* (1995) show that this model has the highest power to detect earnings management, in a broad set of firms, compared to other sophisticated and naive accrual models. They demonstrate, however, that this model has the same specification level (i.e., level of type I error) as other accrual models. This model of total accruals is as follows:

$$(4) \quad \text{TA}_{it}/A_{it-1} = \alpha_i \left[1/A_{it-1} \right] + \beta_{1i} \left[(\Delta \text{REV}_{it})/A_{it-1} \right] + \beta_{2i} \left[\text{PPE}_{it}/A_{it-1} \right] + \varepsilon_{it}$$

where:

TA_{it} = Total accruals in year t for firm i ;
 ΔREV_{it} = Revenues in year t minus revenues in year $t-1$ for firm i ;
 PPE_{it} = Gross property, plant, and equipment in year t for firm i ;
 A_{it-1} = Total assets in year $t-1$ for firm i ; and
 ε_{it} = The error term in year t for firm i .

Total discretionary accruals are defined as total accruals scaled by previous period total assets minus the level of nondiscretionary accruals predicted by using equation (4)'s parameters:

$$(5) \quad \text{TDA}_{it} = \text{TA}_{it}/A_{it-1} - \alpha_i \left[1/A_{it-1} \right] - \beta_{1i} \left[(\Delta \text{REV}_{it} - \Delta \text{REC}_{it})/A_{it-1} \right] - \beta_{2i} \left[\text{PPE}_{it}/A_{it-1} \right]$$

where:

TDA_{it} = The level of total discretionary accruals for firm i in the event year $t = 0$; and
 ΔREC_{it} = Accounts receivable in year t minus accounts receivable in year $t-1$ for firm i .

The other variables are defined as in equation (4) above.

For both the non-current and the total accrual models, the model parameters are estimated for each firm over the maximum (available) number of years preceding the event year [with a minimum of six years of valid data (DeFond and Jambalvo, 1994)]. Time-series models, as opposed to cross-sectional (industry) models, are

preferable because industry-relative models have less power in detecting earnings management around events occurring in the same year for a large number of firms in the same industry (i.e., calendar-clustered events) (Shivakumar, 1996). For example, import relief investigations are usually industry specific, and many firms in the same industry would be under governmental investigation at the same time.

Debt Covenant Variable

The closeness of a firm to violating its debt covenant restrictions is measured using the ratio of beginning-of-year long-term debt over beginning-of-year shareholders' equity, where the year of interest is the event year (i.e., year $t = 0$). Duke and Hunt (1990) and Press and Weintrop (1990) provide empirical evidence supporting the validity of the debt/equity ratio as a proxy for the existence and tightness of debt covenant constraints. Further, annual report footnotes were read in an attempt to use actual debt covenant restrictions. Because our sample is made of healthy firms, however, only two firms have binding debt covenants as defined by DeAngelo *et al.* (1994). Therefore, statistical results are more reliable using a debt/equity proxy as compared to using a dummy variable that would have a low variance.

Government Lobbying Variable

Whether a firm is subject to a governmental investigation (import relief investigation or anti-trust investigation) is measured (using annual reports, 10-K reports, and WSJI) with a dummy variable that takes the value of one (1) if the event year is the year during which the firm was undergoing an investigation or the year preceding the beginning of the investigation and takes the value of zero (0) otherwise.

Management Change Variable

Using annual reports, 10-K reports, and WSJI, a nonroutine change of top executive (resignation or proxy contest-induced change) is indicated with a dummy variable that takes the value of one (1) if the event year is the first year during which the departing CEO (or president or chairman) does not have control over the year-end financial statements (using the financial statements' date as cutoff), and takes the value of zero (0) otherwise.

Union Negotiations Variable

Involvement in labor negotiations is measured with a dummy variable that takes the value of one (1) if the event year is the year during which labor talks were ongoing or the year preceding such talks and takes the value of zero (0) otherwise. Annual reports, 10-K reports, and WSJI are used to classify firms in each category.

Table 1—Descriptive Statistics for the Sample of Healthy Firms

	Min	Max	Median	Mean	Standard Deviation
Income in Year 0 ^a	0.05	1,461	10.090	60.749	156.730
Total Market Value of Equity ^b	0	38,148	109.940	1,047.347	3,547.814
Total Assets ^c	2.78	10,513	128.250	789.034	1,678.123

^aNet income during the event year (in \$ millions)^bMarket value of common equity at the end of the event year (in \$ millions)^cBook value of total assets at the end of the event year (in \$ millions)

Results

Descriptive Statistics

The sample of healthy firms meeting the selection criteria consists of 161 firms. Per Table 1, the mean net income of these firms is 60.749 million (median is 10.090 million) during the event year. Table 1 also shows that the mean total assets in the event year is \$789 million, whereas the median total are \$128 million, which indicates that the sample consists of large firms.

As reported in Table 2, among the 161 firms, 4 (2 percent) experienced a non-routine top-level management change, 11 (7 percent) were involved in reported union negotiations, and 12 (8 percent) firms reportedly lobbied governments. Moreover, the mean debt/equity ratio is 0.48, which indicates, when analyzed with the mean net income reported in the preceding paragraph, that sample firms are indeed healthy. Further, the mean level of non-current discretionary accruals (NCDA) is 0.008 and -0.002 for total discretionary accruals (TDA). But 81 firms (50 percent of the sample) have positive NCDA values, whereas 91 firms (56 percent) have positive TDA values. This suggests cross-sectional variation in the determinants of discretionary accruals (earnings management).

Table 2—Descriptive Statistics for Dependent and Independent Variables

Variable	Min	Max	Median	Mean	Standard Deviation	Number of Observations > 0
NCDA ^a	-0.205	0.332	0.000	0.008	0.055	81
TDA ^b	-0.390	0.419	0.007	-0.002	0.102	91
Dequ ^c	0	5.168	0.269	0.477	0.691	140
CEO ^d	na	na	na	na	na	4
Union ^e	na	na	na	na	na	11
Gov ^f	na	na	na	na	na	12

^aNon-current discretionary accruals measured using the Hunt *et al.* model^bTotal discretionary accruals measured using the modified Jones model^cBeginning-of-year debt/equity ratio^dManagement change dummy variable, where 1 = change and 0 = no change^eUnion negotiation dummy variable, where 1 = negotiations and 0 = no negotiations^fGovernment lobbying dummy variable, where 1 = investigation and 0 = no investigation

Table 3—Industry Clustering of the Sample and Distribution of Event Years

Two-Digit SIC Codes	Industry	Number of Firms	Percentage of Sample	Number of Observations (and % of industry) in the Two Most Frequent Event Years	
1-19	Agriculture, Mining, Construction	11	6.9	3 (27%)	1993
				2 (2%)	1990
20-29	Food and Kindred Products	39	24.2	19 (49%)	1986
				7 (18%)	1989
30-39	Manufacturing	61	37.9	16 (26%)	1986
				10 (16%)	1989
40-47	Transportation Services	6	3.7	2 (33%)	1986
				2 (33%)	1992
50-59	Wholesale and Retail	20	12.4	6 (30%)	1986
				4 (20%)	1992
70-89	Other Services	24	14.9	4 (17%)	1989
				4 (17%)	1990
Total		161	100.0		

As indicated in Table 3, 61 firms (38 percent) belong to the manufacturing industry, whereas 39 firms (24 percent) come from the food and kindred product industry. These figures are reasonable for a manufacturing-based economy. However, 49 percent of healthy firms in the food and kindred product industry, 33 percent of firms in the transportation service industry, 30 percent of firms in the wholesale and retail industry, and 26 percent of firms in the manufacturing industry have their event years in 1986. Further, 27 percent of firms in the agriculture, mining, and construction industry have their event years in 1993. This indicates that the sample is clustered by industry/year, thus providing evidence against the use of cross-sectional accrual expectation models.

Regression Results

The regression results (displayed in Table 4) indicate that the debt covenant variable (i.e., Dequ) is statistically significant (p -value = 0.012) for the non-current discretionary accrual variable only (NCDA).⁵ This suggests that the closer a healthy firm is to violating its debt covenant restrictions, the more likely its managers will make income-increasing non-current accruals. This result, for healthy firms, is consistent with the vast majority of results obtained for mixed samples of firms in the literature. Further, results shown in Table 4 also show that the union negotiations variable (i.e., union) is statistically significant (p -value = 0.049) for the total discretionary accrual variable only (TDA). When a healthy firm is involved in union

⁵ The same model was estimated without an intercept (i.e., intercept forced to a value of zero) and the debt covenant variable was still significant (t -stat = 2.611, p -value = 0.01). The overall model's F -stat was 2.959 with a p -value of 0.02.

Table 4—Regression Results

The signs next to each independent variable indicate the predicted direction of managers' discretionary accounting choices in the event year (i.e., + for income-increasing and - for income-decreasing choices)

Independent Variable	Dependent Variable = NCDA ^a			Dependent Variable = TDA ^b		
	Parameter Estimate	t-test ^c	p-value	Parameter Estimate	t-test ^c	p-value
Intercept	-0.001	-0.122	0.903	0.013	1.283	0.202
Dequ(+) ^d	0.014	2.281	0.012 [*]	-0.022	-1.841	0.966
CEO(-) ^e	-0.009	-0.335	0.369	-0.063	-1.218	0.113
Union(-) ^f	-0.001	-0.086	0.466	-0.053	-1.659	0.049 [*]
Gov(-) ^g	0.026	1.555	0.939	0.013	0.421	0.663
F-stat. ^h =2.128 p-value=0.079 R-sq. ⁱ =0.027			F-stat.=1.885 p-value=0.116 R-sq.=0.022			

*Significant at the 0.05 alpha level or better

^aNon-current discretionary accruals measured using the Hunt *et al.* model

^bTotal discretionary accruals measured using the modified Jones model

^cOne tailed t-test (except for the intercept which is a two-tailed test) of the following null hypothesis: parameter estimate = 0

^dBeginning-of-year debt/equity ratio

^eManagement change dummy variable, where 1 = change and 0 = no change

^fUnion negotiation dummy variable, where 1 = negotiations and 0 = no negotiations

^gGovernment lobbying dummy variable, where 1 = investigation and 0 = no investigation

^hTest of the overall model significance

ⁱAdjusted R-square which represents the percentage of the variation in the dependent variable explained by the variation in the independent variables, adjusted for the number of independent variables in the model

negotiations, its managers are more likely to make income-decreasing total accruals. This result is contrary to the results obtained for mixed samples of firms.

The government lobbying (Gov) and the management change (CEO) hypotheses, however, are not supported by the results (using either dependent variable). The results for the government lobbying and the management change variables are inconsistent with the literature on mixed samples of firms. This suggests that earnings management incentives from top executive changes and government lobbying may be weaker for healthy firms as compared to troubled firms [as shown by Murphy and Zimmerman (1993) for management changes].

Table 4 also reveals adjusted r-squares for both models. The model using NCD as the dependent variable has an adjusted r-square of 0.027, which indicates that 2.7 percent of the variation in the dependent variable is explained by the variation in the independent variables. The adjusted r-square may seem low, but this paper focuses on some determinants of accounting choices as opposed to developing

a complete theory of accounting choices.⁶ Therefore, the statistical significance of the variables, rather than the adjusted r-square, is the relevant statistic in this case.

A correlation matrix is presented in Table 5. According to this table, the highest absolute Pearson correlation coefficient is 0.111 and pertains to the correlation between the *union negotiation* and the *government lobbying* variables. This correlation coefficient is extremely low. Therefore, *a priori*, there does not seem to be any serious multicollinearity problem among the independent variables.

Table 5—Correlation Matrix

P-values under the null hypothesis of Pearson coefficient = 0 are indicated in parentheses				
	Dequ	CEO	Union	Gov
Dequ ^a	1.000 (0.00)			
CEO ^b	-0.038 (0.64)	1.000 (0.00)		
Union ^c	0.062 (0.43)	-0.043 (0.59)	1.000 (0.00)	
Gov ^d	0.099 (0.21)	0.107 (0.18)	0.111 (0.16)	1.000 (0.0)

^aBeginning-of-year debt/equity ratio

^bManagement change dummy variable, where 1 = change and 0 = no change

^cUnion negotiation dummy variable, where 1 = negotiations and 0 = no negotiations

^dGovernment lobbying dummy variable, where 1 = investigation and 0 = no investigation

The results of Belsley, Kuh, and Welsch (1980) collinearity diagnostics are shown in Table 6. These results show that condition indices are all, by far, below 6.0. Therefore, the collinearity diagnostics do not indicate any serious multicollinearity among the independent variables.

Conclusions and Limitations

This paper contributes to the accounting literature by providing an analysis of the determinants of accounting choices in healthy firms. Such determinants are only analyzed for samples of mixed firms and troubled firms in previous research.

The results suggest that the closer a healthy firm is to violating its debt covenant restrictions, the more likely its managers will make income-increasing accounting choices to prevent such violation and reduce the expected costs of technical default. This result is consistent with the bulk of the evidence on mixed samples of firms, but contrary to the evidence provided by DeAngelo *et al.* (1994) and Peltier-Rivest (1999) on troubled firms. Further, the results indicate that when a healthy firm is

⁶ The Tax Reform Act of 1986, which reduced corporate income tax rates, may have provided incentives to increase net operating losses (to maximize tax benefits) from 1986 through 1991 (Maydew, 1993). These tax incentives are unlikely to be correlated with the determinants analyzed in this paper, thus not affecting the interpretation of this paper's results.

negotiating with its labor union, its managers are more likely to adopt income-decreasing accruals to increase the chances of obtaining labor concessions from the union. This is inconsistent with the evidence on mixed samples of firms and that provided by Peltier-Rivest (1999) on troubled firms.

The empirical results obtained in this paper do not support the hypotheses of income-decreasing incentives for healthy firms experiencing management changes or involved in government lobbying. The lack of empirical support for the management change and government lobbying hypotheses is contrary to the evidence on mixed samples of firms. These results suggest that earnings management incentives from government lobbying and management changes may be weaker for healthy firms as compared to troubled firms.

Table 6—Collinearity Diagnostics^a

Eigenvalue	Condition Index ^b	Intercept	Dequ ^d	Variance Proportions ^c		
				CEO ^e	Union ^f	Gov ^g
1.932	1.000	0.114	0.106	0.020	0.062	0.078
1.017	1.378	0.002	0.018	0.716	0.144	0.044
0.857	1.502	0.071	0.176	0.009	0.503	0.206
0.776	1.578	0.010	0.000	0.218	0.270	0.671
0.417	2.152	0.804	0.700	0.037	0.021	0.001

^aThese diagnostics were developed by Belsley, Kuh, and Welsch (1980)

^bA condition index is the square root of the ratio of the largest eigenvalue to the individual eigenvalue

^cA variance proportion is the proportion of the variance of the estimate accounted for by each principal component.

^dBeginning-of-year debt/equity ratio

^eManagement change dummy variable, where 1 = change and 0 = no change

^fUnion negotiation dummy variable, where 1 = negotiations and 0 = no negotiations

^gGovernment lobbying dummy variable, where 1 = investigation and 0 = no investigation

The above results underscore the importance, in empirical research, to partition sample firms according to their degree of financial distress (e.g., distressed or healthy) because the firm's financial situation may influence managers' incentives to manage earnings.

The results obtained in this study will contribute to auditors by providing them with evidence that may be used in auditing healthy firms' financial statements. Further, this paper provides other stakeholders with evidence that may alter their analyses of healthy firms' financial information.

This paper suffers from some limitations. First, the power of the analyses is contingent upon the accuracy of the method used to identify firms engaged in union negotiations, government lobbying, or having experienced a top management change. Annual reports, 10-K reports, and *The Wall Street Journal Index* may not identify certain important events.

Second, the modified Jones' (1991) model and the Hunt *et al.* (1996) model used to estimate discretionary accruals may lead to measurement error in the

dependent variable. To the extent that this measurement error is correlated with one of the independent variables, the probability of committing a Type I error is increased.

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