

THE CHANGE FROM FINANCIAL ACCOUNTING  
STANDARD NO. 8 TO FINANCIAL  
ACCOUNTING STANDARD NO. 52  
AND MANAGEMENT FINANCING  
DECISIONS

By

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## CHAPTER I

### INTRODUCTION

#### Historical Background

Few financial accounting reporting problems have received as much attention as the translation of the foreign financial statements of U.S. owned investees. At a time when there were very few standards at all, Accounting Research Bulletin No. 43 (ARB No. 43) [AICPA, 1953] devoted a chapter to a survey of methods of accounting for and disclosing foreign operations and for translation of foreign financial statements. The recommendations of ARB No. 43 were only slightly modified by Accounting Principles Board (APB) Opinion No. 6 in 1965 [AICPA, 1965]. A wide range of methods was still considered acceptable. An exposure draft of a proposed APB Opinion, "Translating Foreign Operations," was issued in 1971 but was never finalized.

Political problems and a declining acceptance caused the demise of the APB in 1972. The Financial Accounting Standards Board (FASB) inherited the problem of accounting for and reporting international operations; economic conditions in the United States forced the FASB to give prompt attention to the problem. The U.S. dollar had been

allowed to float for the first time since the 1945 Bretton Woods Conference. The dollar was rapidly declining against most other currencies as a result of many years of artificially high exchange rates. In the United States, unemployment, inflation, and an unfavorable trade balance were directing public and political attention to the activities of multinational enterprises (MNEs). Severe economic sanctions were imposed, and others were proposed.

The FASB made foreign currency translation the first item on its agenda and issued a temporizing statement, Statement of Financial Accounting Standards No. 1 "Disclosure of Foreign Currency Translation Information," (Statement No. 1) in 1973 to standardize reporting until it could study the question in more depth. This statement essentially endorsed the multiple methods permitted under APB Opinion No. 6. In 1975, Statement No. 8, "Accounting for the Translation of Foreign Currency Transactions and Foreign Currency Financial Statements," replaced Statement No. 1. Statement No. 8 required a single method, the temporal method, for translating financial statements; it also required immediate recognition of translation gains and losses. Accountants, corporate representatives, and the financial press immediately protested and denounced the requirements of Statement No. 8 as misleading to statement users and costly to firms. These parties lobbied for another change.

It is not clear whether the FASB yielded to pressure or was persuaded that Statement No. 8 had caused severe economic consequences to firms and investors. However, the board issued a new standard in 1981, Statement No. 52, "Foreign Currency Translation." Reversing its previous stand, the FASB changed the method of translation to the current rate method and required the deferral of translation gains and losses through special adjustments directly to stockholders' equity, for those firms designating the foreign currency as the functional currency. Evans and Douppnik [1986] found that most firms elected to apply the current rate method except where they were precluded from doing so because investees were operating in highly inflationary economies.

#### Statement of the Research Question

The standards for foreign currency translation have no tax effects and no direct cash flow effects, but many affected firms and individuals complained loudly that Statement No. 8 caused adverse economic consequences. Holthausen and Leftwich [1983] state, "Accounting choices have economic consequences if changes in the rules used to calculate accounting numbers alter the distribution of firms' cash flows, or the wealth of parties who use those numbers for contracting or decision making." There are many reasons why a basically cosmetic accounting change may produce decisions by managements that ultimately

change production or investment decisions and therefore cash flows.

The very act of lobbying against an accounting standard causes a change in cash flows because the time and effort expended on the action is costly. This alone would probably be insufficient to have a significant economic impact. But, if management takes actions to influence reported numbers, those actions may have very significant effects on actual cash flows. If investors, correctly or incorrectly, anticipate changes in managements' behavior, their expectations will be reflected in the firms' share prices in an efficient market.

Empirical research in the area of economic consequences of changes in accounting standards has been largely confined to analyses of the impact on the prices of firms' common stock. Leftwich [1981] argued that it should be beneficial to extend tests to nonprice data, to evidence of choices made or actions taken in response to changes in the accounting environment. He cited as an example the allegation that some companies undertook currency hedging in response to Statement No. 8. Leftwich believed that if this allegation is true, it suggests an economic consequence of accounting numbers of large magnitude.

Attempts to detect changes in share prices caused by the temporal method of translating foreign currency

statements under Statement No. 8 have yielded inconsistent results. Studies attempting to associate specific firm characteristics or changes in management behavior with a decision to lobby against Statement No. 8 have led to little more than the conclusion that firms that lobby tend to be large compared to firms that do not lobby. These points are discussed more fully in Chapter II.

There are two important shortcomings in many studies of economic consequences of accounting standards. One is that the linkage between an event and a consequence is often overlooked. Statement No. 8, by itself, should not have caused a share price reaction. However, it may have caused actions by managements which led to a market price reaction. A second shortcoming is in treating accounting changes as if they occur in a vacuum. There may be contemporaneous conditions which create both the need for an accounting standard and the belief that parties have been adversely affected by that standard. The advent of floating exchange rates, increased inflation, and high interest rates are examples of such conditions which it appears may not have been given appropriate consideration in the foreign currency translation literature.

The purpose of this research was to test for two specific management actions in response to Statement No. 8 and Statement No. 52 that could alter firms' cash flows:

- (1) a change in the proportion of foreign currency denominated long term debt to total long term debt and
- (2)

a change in the proportion of short term debt to total debt for firms subject to these standards. These two changes were selected because surveys of affected firms indicated that these were specific changes that were made in response to Statement No. 8 to avoid accounting exposure to translation losses [Business International Corporation, 1982; Evans, Folks, and Jilling, 1978; Shank, Dillard, and Murdock, 1979]. The change in denomination of debt, indicated by some of these firms, was a substantial decrease in the use of foreign currency denominated debt. The change in term of debt was to allow more flexibility in managing accounting exposure. An increase in current liabilities would also result from increased hedging activities. Statement No. 8 would also encourage the use of less long term debt relative to short term debt because under the temporal method all debt was subject to translation exposure; whereas under certain previously acceptable methods, only current liabilities were exposed. Even when the previously used accounting method resulted in translation exposure for all liabilities, the practice of amortizing translation gains and losses over the life of the long term obligation ameliorated the effect on accounting income [Shank, Dillard, and Murdock, 1979]. The environmental economic events which also may have been causal factors--floating exchange rates, inflation, and interest rates--are controlled for in this study.

This study was concerned with overall, marketwide effects. The policy of the FASB is that accounting standards should be neutral. Neutral in this case does not imply a lack of effect, but rather that there are no predetermined adverse effects for those firms which are subject to the standard. Time series and cross sectional accounting data were pooled to estimate parameters for the population of firms subject to the provisions of Statement No. 8 and 52. Random coefficients regression (RCR) was used. RCR, described more fully in the research design section, provides efficient estimates of population parameters from pooled data. This method is considered an appropriate method for detecting overall changes in a population from pooled, observational, time series, and cross sectional data [Dielman, 1980; Easton, 1987; Judge, et al., 1982; Swamy, 1971].

The next two sections of this paper review some of the more significant research on the economic consequences of Statement No. 8 and Statement No. 52 as well as on some other accounting changes and describe the theoretical framework for this research. The remaining sections describe the data and methodology for the study, the results of the study, a discussion of the results and their implications, and future research indicated by this study.

## CHAPTER II

### REVIEW OF THE LITERATURE

#### Motivation for Economic Consequences Literature

Several events in the 1970's led to the development and refinement of theories underlying economic consequences of accounting standards and to attempts to identify and measure those consequences. The literature in this area has come to be more frequently referred to as positive accounting theory literature. From the time of its establishment, the FASB concentrated on establishing a Conceptual Framework which would help determine future accounting standards. Conscious of the problems which led to the failure of the Accounting Principles Board, it structured the standard setting process to develop standards which could be supported by a basic underlying theory of accounting. Public hearings are solicited during the development stage of a proposed standard and open hearings are held before the final issuance of new standards. Because there was no formal procedure to evaluate, ex post, the consequences of the standards, in 1978 the FASB called for research on the effects of the standards which it had issued to that date and held the



first conference to consider the results of that research. Since that time it has continued to encourage and commission such studies.

While the FASB was working to establish its credibility as a standard setter by establishing a theory of accounting, a substantial body of literature emerged which stressed that political and economic pressures determined accounting standards rather than any normative theory. Watts and Zimmerman [1979], for instance, held that government regulation creates incentives for individuals to lobby on proposed accounting procedures, and accounting theories are useful justifications in the political lobbying. They propose that if lobbying is not successful, agency costs may be incurred to renegotiate contracts and refinance debt. With the presence of government regulation there is even greater motivation to incur costs as a result of certain accounting standards. Watts, Zimmerman, and others established, if there had previously been any doubt, that new or changed accounting standards are costly. Researchers attempted to characterize firms which incurred costs and to identify and measure those costs.

The development of the efficient market hypothesis and the capital asset pricing model in the finance literature allowed accounting researchers to identify abnormal returns, or economic consequences, of financial events. Thus the demand for an accounting theory,

political pressures, emerging financial theory and the availability of data bases and computers generated the economic consequences or positive theory literature.

### General Economic Consequences Research

#### General Price Level Adjustment

Watts and Zimmerman [1978] hypothesized that "managers have greater incentives to choose accounting standards which report lower earnings (thereby increasing cash flows, firm value, and their welfare) due to tax, political, and regulatory considerations than to choose accounting standards which report higher earnings and, thereby increase their incentive compensation" when the firm is regulated or is subject to political pressure. They used regression and discriminant analysis to study the lobbying practices of firms commenting on the FASB's proposed General Price Level Adjustment and found that the single most important factor explaining managerial support for this standard, which would reduce reported income, was firm size. The authors interpreted firm size to represent sensitivity to political costs. They predicted that firms would manage reported earnings and alter investment/production decisions if they believed the costs of government interference would be large. Even if management compensation is temporarily reduced by an accounting standard which reduces reported income, the authors believe this will be adjusted for promptly because

such adjustments are in the best interest of both owners and management.

The findings of Watts and Zimmerman are relevant to subsequent economic effects studies in that they predict that political cost factors will outweigh contracting cost factors for large firms. Firms will negotiate new contracts and alter investment activities in response to changes in standards.

#### Successful Efforts Accounting in the Oil and Gas Industry

Collins, Rozeff, and Dhaliwal [1981] examined the "economic reasons for the negative abnormal common stock performance of firms whose reported earnings and stockholders' equity were negatively affected by the proposed elimination of full cost accounting in the oil and gas industry." Statement No. 19 eliminated the use of the full cost method of accounting and required all firms to use the successful efforts method to account for exploration costs. This significantly reduced reported income for the firms studied and also increased the volatility of reported earnings. The authors considered four explicit theories to explain the negative effects of the proposed statement reported in earlier market tests performed by Collins and Dent [1979] and Lev [1979].

Collins, et al, used cross sectional multiple regressions to test whether the abnormal returns resulted

from naive investor, modified naive investor, contracting cost, or estimation risk theory. Their results indicated something more than naive investor theory was at work. Naive theories imply that if earnings per share decline, even though cash flows do not, either investors will discount the share price in the market or management acts as if some investors will do so. Contracting cost theory, explained more fully in the next chapter, states that accounting methods are chosen as part of a wealth maximizing process. A new mandatory statement restricts the investment/financing/accounting method mix which would maximize shareholder wealth. The new mix reduces expected cash flows by increasing information costs, causing firms to seek new capital suppliers and to incur bonding and monitoring costs. Estimation risk arises when investors become less certain of the firm's cash flows because of income volatility or because they are uncertain of management's reaction to a change. Investors therefore expect a higher rate of return.

Total capital, or size, was used as a comprehensive proxy for leverage, public debt, political costs, and omitted factors. Collins, et al, predicted all but political costs should have a negative sign but that political costs would yield a positive relationship. Size and leverage were both found to be significant in this study but the researchers could not determine whether the contracting cost or estimation risk theory best explained

the negative abnormal returns because of their use of size to proxy for so many variables. They conclude that their research, and the research of others, clearly establish that the elimination or change of accounting choices may affect investment/financing decisions and create a loss or transfer of wealth among the providers of firm capital.

### A Review of Economic Consequences

#### Literature

Holthousen and Leftwich [1983] reviewed the economic consequences literature prior to 1983 and concluded, as did Collins and Dent, that size and leverage affect choices of accounting techniques. Accounting changes appear to have economic consequences but there is no theory yet to make these predictions. They also suggested that since new or changed accounting standards are usually politically and economically motivated, most of the studies are flawed by the omission of environmental variables and the failure to observe what specific investment/financing changes are made.

Recently Watts and Zimmerman [1990] reviewed the research in what they call positive accounting theory and concluded that the most important result of this research was the discovery of certain empirical regularities in firms' choices of accounting methods and other firm variables, such as leverage and size. They found that there are still serious problems in research methodology

and that researchers must improve the linkage between theory and empirical tests.

### Patterns of Research in Foreign Currency Translation

Prior research on the economic consequences of accounting changes with respect to foreign currency translation can be classified into three basic groups: capital market studies of stock price responses to the announcement of a proposed change or to the actual change in an accounting standard, tests to discern characteristics of the firms which lobbied for modification to the requirements of Statement No. 8, and surveys which asked managers of affected firms about changes made in investment and financing activities as a result of standards changes.

#### Stock Prices as Direct Evidence of Economic Consequences of Mandatory Standards for Accounting for Foreign Currency Translation

Makin [1978] investigated the share price performance of three groups of firms: multinationals (MNEs), matched pairs of domestic firms, and self-selected "sensitive" firms. These latter firms had either lobbied against Statement No. 8 or had stated publicly that they would be adversely affected by the standard. Five time periods,

before and after various exposure drafts and the issuance of Statement No. 8, from the years 1970 through 1977 were examined to capture separately the effects of floating exchange rates and accounting standard changes. The results of this study suggested that the application of Statement No. 8 produced little effect on share prices of MNEs in general, but had a negative effect on the so called sensitive group and this effect was greater for large firms than for small.

In a study financed by the FASB, Dukes [1978] examined the price behavior of shares of U.S. MNEs at several dates preceding and subsequent to the issuance of Statement No. 8. He did not control for environmental conditions such as inflation and exchange rates. Dukes found no significant changes in either share prices or variability of returns for his sample of MNEs, as a result of applying Statement No. 8, although he found the returns of MNEs in general were lower than the returns of a matched group of domestic firms. He found no statistical difference between the returns of large and small firms.

In a capital market study financed by the Financial Executives Institute, Shank, Dillard, and Murdock [1979] found no change in perceived risk from Statement No. 8. They found that the market reacted negatively to multinational firms in general during the time period studied and that this reaction applied to firms already accounting for foreign operations by the temporal method

as well as to those that were required to change. Their study does indicate changes in management policies which are discussed later. They expressed the belief that the FASB should perhaps reconsider Statement No. 8 because it may not reflect the complexity of foreign accounting problems, however, reconsideration on the basis of managerial impact was not indicated.

Using a modification of the usual market model, Ziebart and Kim [1987] standardized the average cumulative abnormal returns and used several shorter--than those used by the two previous research studies--test periods around Statements No. 8 and 52. The shorter test periods and standardization of returns were considered more powerful in detecting what the researchers expected to be fairly small effects. In contrast with earlier findings, they found statistically significant negative returns for firms required to change their measuring method by Statement No. 8 but not for those having to change from deferred to direct writeoff of gains and losses. They also found positive returns for firms in general associated with the solicitation by the FASB of comments regarding a change to Statement No. 8 and with the issuance of the exposure draft for Statement No. 52.

Salatka [1989] used ordinary least squares and weighted least squares regressions on a control group, early adopters, and late adopters of Statement No. 8 to test for negative excess returns as an indication of stock



price changes in the two experimental groups. His findings indicated that price changes had occurred in both experimental groups. He concluded that share price changes for early adopters resulted from changes in production, investment, and/or financing choices in response to impending contractual and political constraints, while the price changes for late adopters were probably more directly attributable to contractual constraints and political costs. Salatka felt that further research was needed to explore the differences between early and late adopters in specific production, investment, and financing activities. He cautioned that he did not control for exchange rate changes or inflation and that the stock price changes which he observed may have resulted from economic events which have no direct connection with Statement No. 8.

It has been shown in a simulation study that the temporal method required in Statement No. 8 increased volatility of reported income [Rupp, 1982]. A recent survey of security analysts [Griffin and Castanias, 1987] also found support for a widely held belief that Statement No. 8 caused increased earnings volatility. One might anticipate that this increased volatility would consistently result in decreased returns. However, only the studies by Ziebart and Kim and by Salatka confirm the anticipated effect. It therefore appears that the results of the capital market studies are either inconclusive or

that effects are relatively small, and may be detectable only with improved statistical techniques. Further, it appears important that future tests consider the possibility that the observed price changes may be the result of factors other than the change in accounting method.

### Characteristics of Firms Lobbying

#### Against Statement No. 8

Kelly [1982] tested whether firms that lobbied for changes from Statement No. 8 also made changes in financing or operating activities. No change was detected. Then an analysis was made to predict (1) lobbying for changes to Statement No. 8, (2) a change in financing or operating activities, or (3) either lobbying behavior or a change in financing or operating activities. The predictions were based on (1) the existence of an incentive contract, (2) leverage, (3) size, (4) percentage of management ownership, and (5) the ratio of foreign assets to total consolidated assets. Only size was found to be significant in changing operating and financing activities. All of the independent variables except foreign assets were significant for either lobbying against Statement No. 8 or for changing financing or operating activities. Only size and low management ownership explained lobbying by itself. Kelly suggested that this revealed managements' risk aversion in the face

of increased income volatility and the dominance of political costs behind decisions to change financing or operating activities.

In an extension of her 1982 study, Kelly [1984] used a contracting theory perspective to examine the influence of management's wealth on the decision to lobby against Statement No. 8. This research focused on the role of debt covenants and management's proportional ownership of the firm. It controlled for firm size and the magnitude of the potential effect; this was not done in the prior study. Size and foreign sales, proxying for political visibility, were the only significant variables in the decision to lobby because of implementation difficulties. Neither the existence of incentive contracts nor the degree of leverage was statistically significant. Lobbyers opposed to the income effect were characterized by large size and foreign sales percentage. This study partially confirmed her earlier [1982] findings, but controlling for size reduced the significance of all of the other predictor variables.

Discriminant analysis was used by Griffin [1983] to classify firms by whether or not comment letters were submitted on either Statement No. 8 or 52. Discriminants were the ratio of long term debt to equity, market value of the firm, sales to assets, return, earnings available for common stock, amount of foreign currency adjustment to net income before taxes, and market beta coefficients.

Griffin found, as Kelly did, that firms that lobbied were large. He assumed size to be a proxy for political visibility. Tests of significance for the discriminant function coefficients were not made because there was no reason to assume equal covariance matrices or normal distribution for the independent variables.

Gray [1984] classified large multinational firms by whether they used Statement No. 8 or Statement No. 52 in 1981 and whether the method used in that year increased or decreased reported income. She found, contrary to Watts and Zimmerman [1978], that the majority of the firms in her sample chose the accounting standard which increased reported income.

The preceding study was criticized by Ayers [1986a]. She examined subsequent financial statements and found so many cases of immaterial effects and revisions of earlier estimates of the increase in reported income that she felt nothing could be determined about the motivation for adopting Statement No. 8 or Statement No. 52 in 1981, as examined by Gray. Ayers [1986b] also studied the characteristics of firms and the year in which they adopted Statement No. 52. She concluded that the firms which chose early adoption were smaller, had a decrease in earnings in the year of adoption, had lower levels of management ownership, and had debt with greater constraints on dividends. These conclusions conflict with Gray's findings [1984] but support the conclusions of

other research--firms choose the accounting method which minimizes reported income or results in less variability of income.

These lobbying characterization studies lead to one consistent conclusion: firms that lobbied with respect to Statement No. 8 tended to be very large but did not appear to have any other statistically significant, common characteristics. The statistical techniques used in the cited studies were unable to reliably predict lobbying behavior or managerial actions. These issues are considered in the methodology section of this paper.

#### Surveys of Consequences of Statements

##### No. 8 and 52

Shank, Dillard, and Murdock [1979], mentioned earlier, also included an extensive survey of financial management policies in their study. Respondents indicated that at least 48 percent were either increasing or decreasing the level of dollar debt to foreign currency debt in financing foreign operations and offsetting asset or liability exposure under Statement No. 8. Most of the firms indicated they were, or they believed they were, spending more to manage foreign exchange risk exposure after Statement No. 8. Eighty four percent indicated that they hedged to smooth the bottom line.

In a survey similar to the preceding one, Evans, Folks, and Jilling [1978] attempted to discover (1) if

management tried to avoid increased volatility of reported earnings by increased or new foreign exchange risk management practices and (2) the estimated costs and benefits of those practices. Most surveyed firms indicated that significant additional resources were expended. They also expressed a belief that Statement No. 8 requirements provided misleading information to statement users. Management emphasized that the costs of protection against rate changes were buried in operating costs whereas translation and exchange gains and losses were highly visible. Many of these firms indicated a shift from a long to a short or even position in foreign currencies. These firms reported that they often engaged in costly hedges to avoid a translation loss, but not a translation gain. Another significant finding from this study and from one performed by Morsicato [1980], was that in most firms, the foreign exchange risk management and decisions regarding the denomination of debt are centrally controlled. This suggests that if management decisions are altered by the accounting standards for translation, the results of actions taken to neutralize the income statement effects of an accounting standard should be of a larger magnitude because of centralized decision making. If separate policies were established by the local managers of decentralized subsidiaries, the diverse local financing activities might cancel out some of the effects.

In contrast to the studies cited above, a survey by Business International Corporation [1982] predicted even greater changes in risk management practices and costs under Statement No. 52 than were claimed under Statement No. 8. Accounting exposure under Statement No. 8 was limited to the difference between assets translated at the current rate and debt, whereas under Statement No. 52, the entire net investment is exposed.

#### Summary of the Literature Reviewed

The literature on direct effects on security prices from a change in accounting standards yielded inconsistent results. Attempts to characterize firms that opposed Statement No. 8 indicated that firms that lobbied tended to be very large. Kelly's [1982] study suggested that some of these large firms that lobbied may also have changed operating and financing activities. The surveys of financial management policies indicated that certain firms believed that Statement No. 8 caused them to change the amount of hedging and the term and denomination of debt.

Surveys tell what firms say they do and not necessarily what they actually do or why they do it. In the literature reviewed, only the surveys attempted to define specific actions undertaken as a result of Statements No. 8 and 52 that would affect cash flows. There appears to be a need to identify specific actions,

if such exist, in order to determine if generally adverse economic consequences resulted from applying Statement No. 8.

Changing economic conditions since 1972-- specifically, exchange rates, inflation, and interest rates--may have affected firms' exchange risk management practices, rather than changes in accounting standards. These conditions should be considered if one is to infer economic implications from changes in accounting standards.

The following section describes the concept of costly contracting and monitoring which may link changes in accounting standards with changes in cash flows. This section is followed by a description of the methodology for a study performed to test for two specific changes in financial management under changing economic conditions and accounting standards.



## CHAPTER III

### THEORETICAL FRAMEWORK

#### Costly Contracting and Monitoring

A theory of economic consequences of accounting choice has developed from agency theory under a concept of costly contracting and monitoring. Under agency theory, an agent/manager is risk averse and seeks to maximize his own wealth. Such maximization may not maximize the value of the firm. When an accounting standard is changed, management will seek to protect its wealth. The action taken by management may change the cash flows of the firm. The economic consequences result from the following causal links between firms' cash flows and reported earnings [Holthausen and Leftwich, 1983]:

1. management compensation plans,
2. government regulations,
3. lending agreements, and
4. political visibility

#### Management Compensation Plans

These plans often allow management to share profits in excess of a target level which is frequently based on accounting income or on a rate of return on some valuation of the firm. Statement No. 8 increased income volatility

and therefore increased uncertainty with respect to management compensation. Under maximization of personal wealth, management is expected to incur lobbying costs in an attempt to try to have the standard changed. In the event the standard cannot be changed, management would seek to reduce the variability of income by changing investment and financing decisions and engage in costly negotiation in order to change compensation plans. Kelly [1984] did not find the existence of incentive compensation plans to be a significant characteristic of firms lobbying against Statement No. 8.

#### Government Regulations

Governmental and regulatory bodies may restrict activities of some firms based on accounting numbers. While regulation primarily affects utilities and similar firms, it could also induce regulation of prices or the imposition of tariffs for oil, airlines and shipping, or for other goods involved in international trade. When accounting numbers change, additional costs may be incurred to lobby politicians to avoid changes in costs or revenues. This link is closely related to that of political visibility.

#### Lending Agreements

Debt covenants based on accounting numbers may place restrictions on a firm. Increased volatility of income

under Statement No. 8 could place a firm in violation of certain of these covenants, restricting its ability to pay dividends and to borrow or forcing costly redemption and refinancing. Kelly [1984] and Griffin [1983] did not find the proportion of long term debt to equity to be a significant characteristic in firms lobbying against Statement No. 8.

### Political Visibility

For politically visible firms, changes in accounting numbers may increase the probability of additional taxes being imposed or privileges being restricted. This linkage is especially important in considering the reaction to Statement No. 8. In the past the U.S. Government has imposed excess profits taxes on large oil companies, restricted the amount and source of direct foreign investment, imposed withholding taxes on repatriated earnings, cancelled tax treaties, and restricted or placed tariffs on imported goods. Other governments also have restricted operations and confiscated assets when the actions of foreign firms were held to have adverse effects on their country's economies or political policies. There is no costly contract to renegotiate in this case but costs are incurred to educate politicians so that undesired legislation will not be enacted and to lobby standard setting bodies to change the accounting standard. If the standard cannot be changed,

additional costs may be incurred to avoid the resultant taxes or restrictions or to neutralize the standard. In most economic consequence studies, size is assumed to be a surrogate for political visibility.

### The No Effects Theory

If capital markets are efficient, an accounting standard which has no effect on cash flows should have no effect on market returns. But, accounting standards will have economic consequences if contracting and monitoring are costly or if management acts as if they are costly. Management may believe that markets are inefficient and that statement users cannot properly interpret accounting numbers changed by reporting standards [Burns, 1976]. Even if managers themselves believe in market efficiency of some form, they may perceive that as individuals, certain investors, directors, officers, or others do not believe in efficient markets; or, they may be rewarded or penalized based on accounting numbers. Consequently, managers may make changes in operating and financing activities to neutralize the effects of a change in accounting standards.

Based on contracting and monitoring theory, management, especially in large firms, is expected to incur costs to lobby to change a standard that causes income volatility. If the standard is not changed, or until it is changed, management will make financing and

investment decisions in an attempt to neutralize the effects of the standard. In the case of the temporal method of translating under Statement No. 8, some of those decisions might involve a change in the denomination of debt or a commitment to more flexible and more expensive short term debt.

The next chapter describes a test for evidence of (1) a change in the proportion of foreign currency denominated debt and (2) a change in the proportion of short term debt to total debt, for firms affected by mandatory accounting standards for translation of foreign financial statements. Political visibility represented by size, financing activities which might smooth reported income, and the changing conditions in the economic environment are important considerations in the research design.

## CHAPTER IV

### RESEARCH DESIGN

#### Research Hypotheses

##### Long Term Debt

Companies claimed that because of the accounting exposure caused by Statement No. 8, they used less foreign currency denominated long term debt. They may have retired such debt early, or replaced it with more costly U.S. dollar denominated debt. Since foreign operations of U.S. MNEs expanded rapidly during the 1970s and 1980s, the absolute amount might be expected to increase. But the increase, if any, may have been at a lower rate than would otherwise be expected because of the accounting restrictions of Statement No. 8. Alternatively, the proportion of foreign currency denominated debt may have actually declined. The adoption of Statement No. 52 eliminated the recognition of translation gains or losses in net income. If firms truly reduced their foreign debt under Statement No. 8, this restriction should be eliminated with the adoption of Statement No. 52 in either 1981 or 1982. The hypothesis to test for a reduction in foreign currency long term debt under Statement No. 8 is:

H<sub>0</sub>1: Firms affected by Statement No. 8 and Statement No. 52 made no change in the proportion of foreign currency denominated long term debt to total long term debt after implementing Statement No. 52.

### Short Term Debt

Firms also claimed that Statement No. 8 caused them to use more costly short term debt because it allowed them more flexibility in reducing accounting exposure to exchange rate fluctuations. An examination of the notes to the financial statements of several large MNEs in this study indicated that nearly all such firms used multiple currency revolving credit arrangements. The terms of these arrangements allowed firms to borrow and repay easily and change the currency in which a loan is denominated. Most of the revolving loan agreements were for periods of up to seven years. These agreements allowed the borrowers some freedom in classifying debt as short term or long term. It also allowed firms to hedge exposed asset positions. The following hypothesis is stated to test for increased reliance on more costly short term debt during the period in which Statement No. 8 was in effect.

H<sub>0</sub>2: Firms affected by Statement No. 8 and Statement No. 52 made no change in the proportion of short term debt to total debt after implementing Statement No. 52.

### Sample Selection

The sample of companies used for this study was taken from "International 150 U.S. Companies Ranked by Foreign Sales" [Business Week, 1986]. The sample firms were limited to large companies for the reasons which follow. Research discussed in Chapter II indicated that the single most significant characteristic of firms that lobbied for a change from Statement No. 8 was size. Second, if managements of large firms take actions to neutralize the impact of a change of accounting method, the resulting effects should be both absolutely and relatively greater for large firms than for small firms. Third, smaller firms are less dependent on public debt and may therefore be less concerned with an accounting change that is basically cosmetic. Finally, Vernon [1977] found that at least 80 percent of all foreign direct investment, at that time, was controlled by fewer than 70 firms and that more than 90 percent was controlled by the 150 largest U.S. MNEs. Assuming similar conditions persist, the activities of the pool of 150 companies may represent 90 percent of the activities that were purportedly affected by the change in accounting standards.

The population from which the sample was selected reported gross foreign sales totalling \$414.9 billion in 1985. The largest firm reported foreign sales of \$62.75 billion. The smallest amount of foreign sales reported by any firm was \$431 million. Any firm not included in the



population from which the sample was selected would have had foreign sales of less than the \$431 million reported by this smallest firm. Each smaller firm's foreign sales would represent less than 0.104 percentage of the combined foreign sales of the 150 firms that made up the sample population and a much smaller percent of the foreign sales by all U.S. companies. Therefore, although many small firms were not subject to selection for the test sample this should not appreciably affect the findings of the study.

The 150 companies were assigned numbers and an original sample of 50 companies was selected on a random basis. Companies were eliminated if:

1. acquisitions or business combinations made results noncomparable for the period 1975-1985;
2. information for the relevant time period was not available in Disclosure or in Moody's Industrial Manual, Transportation Manual, or Bank and Finance Manual; or
3. the notes to the company's financial statements indicated that only the temporal method was used for translating the financial statements of its foreign affiliates subsequent to the adoption of Statement No. 52.

As a company was eliminated from the sample because of the three criteria explained above, another company was randomly selected to replace it. Eighteen of the original

sample of fifty companies were eliminated. Another fourteen were eliminated, or a total of thirty-two, before fifty companies were found which met the selection criteria. The final sample had foreign sales totalling \$219.7 billion, or 52.95 percent of the \$414.9 billion international sales reported by the 150 largest companies. The sample firms are listed in Appendix A; the remaining one hundred firms are listed in Appendix B.

### Regression Equations

The equations used to test the two research hypotheses are:

$$H_{01}: \frac{FCLTD}{TLTD} = B_0 + B_1 (FAS) + B_2 (INT) + B_3 (MERM)$$

$$H_{02}: \frac{STD}{TD} = B_0 + B_1 (FAS) + B_2 (INT) + B_3 (MERM)$$

where:

- FCLTD = foreign currency denominated long term debt
- TLTD = total long term debt
- STD = short term debt (i.e., short term notes payable and advances)
- TD = total debt (i.e., short term debt + long term debt)
- FAS = a dummy variable, 0 or 1, for pre- or post- adoption of Statement No. 52
- INT = interest rate for year
- MERM = strength of the U.S. dollar represented by the Multilateral Exchange Rate Model

### Foreign Currency Long Term Debt

Foreign currency long term debt (FCLTD) was obtained by studying the notes to the financial statements and terms of the debt covenants where such detail was available. Only those long term borrowings which were denominated in specific foreign currencies and required settlement in those specific foreign currencies were included. In many cases the funds borrowed were denominated in foreign currencies but the principal and interest were fixed in terms of U.S. dollars. In other cases principal and interest were denominated in the foreign currency but the debt was fully hedged through exact parallel loans in that currency. These amounts, as well as Eurodollar loans, were excluded from FCLTD.

FCLTD was translated at the current rate, as required under both Statement No. 8 and Statement No. 52. While the translation method is consistent over the time period involved, the amount of the dependent variable, FCLTD, would change simply because of a change in the spot rate between the U.S. dollar and the foreign currency in which the debt is denominated. In order to avoid indexing each exchange rate and re-translating every individual loan, a variable representing the strength of the U.S. dollar relative to other major currencies is included in the regression model to control for the cross temporal fluctuation of exchange rates.

### Total Long Term Debt

Total long term debt (TLTD) is the consolidated balance sheet classification, long term liabilities, excluding long term lease obligations. FCLTD is included in TLTD.

### Short Term Debt

Short term debt (STD) is primarily a balance sheet classification. Current lease obligations are omitted, but it does include the currently maturing portion of long term debt. Notes to the financial statements indicate that most companies with extensive foreign operations purchase the right to lines of credit in multiple currencies with numerous institutions. Many of the firms disclosed the effective interest rates for such loans, which was frequently in excess of 25 or 30 percent.

### Dummy Variable - FAS

The data used in this study covers the years 1975 through 1986. Statement No. 8 was adopted in 1975 and was in effect until 1981 for early adopters of Statement No. 52 or 1982 for those who were late adopters. Some firms, with year ends other than December 31, did not apply the standard until years ending in 1983. It is the sign and statistical significance of this variable, FAS, that is of primary interest.

Interest Rate

The U.S. short term Treasury Bill rate (INT) is used to control for the effects of interest rates on financing decisions. Interest rates are shown in Table I, below. Nominal interest rates are a combination of the real rate of interest and anticipated inflation. The real rate of interest is believed to have increased until mid-1984, to its highest level in this century. The decline in nominal rates, which appears in 1982 is attributed to the sharp decline in actual and anticipated inflation [United States Government Printing Office, 1987].

TABLE I  
TREASURY BILL RATES

---

1970	6.44
1971	4.34
1972	4.07
1973	7.03
1974	7.97
1975	5.82
1976	4.99
1977	5.27
1978	7.22
1979	10.42
1980	11.62
1981	14.08
1982	10.72
1983	8.62
1984	9.57
1985	7.49
1986	5.97
1987	5.83

---

The amount and term of debt, without regard to denomination, are influenced by interest rates. During periods of high interest a company may defer borrowing new funds or borrow for a shorter term, expecting to replace the debt later when terms are considered more favorable.

The denomination of debt may depend to some extent on the difference in interest rates between countries. However, in general equilibrium theory interest rate parity suggests that the real interest rate is constant across currencies and that nominal interest rates reflect inflationary expectations in a specific currency [Rodriguez, 1984]. INT therefore represents both the changing real cost of money and the expected inflation in the United States.

### Exchange Rates

The Multilateral Exchange Rate Model (MERM) is included in the regression to control for the strength of the U.S. dollar relative to other currencies. MERM, shown in Table II on the following page, is calculated by the International Monetary Fund and represents the strength of the U.S. dollar relative to other major trading currencies. MERM is a complex weighted average using exchange rates, trade volumes and cash flows of 20 major trading nations and has been calculated with only minor adjustments since 1970.

TABLE II  
MULTILATERAL EXCHANGE RATE MODEL

---

1970	128.60
1971	125.40
1972	116.40
1973	106.80
1974	109.50
1975	106.70
1976	112.20
1977	117.70
1978	102.10
1979	99.90
1980	100.00
1981	112.70
1982	125.90
1983	133.20
1984	143.70
1985	150.20
1986	122.50
1987	108.00

---

Other measures of relative strength of currencies are available but these have been subjected to more revision over time [Rodriguez, 1984]. Prior to 1970 most currencies were pegged to the dollar. When currencies were allowed to float and the gold standard was abandoned, the dollar declined rather sharply in value until 1980.

Purchasing power parity implies that the same market basket of goods purchased with different currencies should cost the same regardless of currency. If this were true it should not be necessary to include a variable for monetary strength once currencies were allowed to float; however, monetary policy, political conditions, tax laws,

technology, demand, trade balances and many other factors all cause purchasing power parity not to hold at least in the short run. All of these factors probably influence a firm's decision with respect to the source and terms of debt.

It has been suggested [Hakkio, 1986] that the relationship between interest rates and exchange rates, underwent a structural change during the period involved in this study. Hakkio studied the relationship between interest rates and exchange rates for short segments of the years 1974 through 1985. He suggests that the two rates should move together but that during the 1970s the dollar and U.S. interest rates were dominated by inflation shocks and that during the 1980s changes in real interest rates were the dominant influence on interest rates and the dollar. Hakkio's findings were based on comparisons of interest rates and exchange rates at the same point in time and at intervals of two to four years. A study of the entire time period, however does not support his conclusions. At the same point in time there was little correlation between the two variables but there was a very high positive correlation (.70) between nominal interest rates at time  $t-3$  and nominal exchange rates at time  $t$ . This could imply that when U.S. interest rates are high, demand for dollar investments increases and drives up the strength of the dollar over time, that is, that equilibrium occurs over time. It may further suggest that



the two are really quite different. That is, exchange rates may only represent current costs while interest rates represent longer run realities in the real interest rate plus inflationary expectations.

Interest rates and exchange rates should have an effect on a firm's choice of debt term and denomination. Both rates are included in the model used in this study to control for their impact on financing decisions which may have been attributed mistakenly to the change in accounting standards.

#### The Regression Model

The econometrics literature suggests at least eight techniques for analyzing pooled cross sectional and time series data. Dielman [1980] has developed guidelines which were used for selection of the most appropriate method. On Dielman's decision tree-- Figure 1 on the following page--the path chosen from point A depends on the objective of the analysis. If answers about individual subjects are desired, the correct path leads to point B. For the purposes of this study the overall effects of the change from Statement No. 8 to 52 are desired. This leads to point C in the decision tree.

If it can be assumed that all subjects react in the same manner, all data can be pooled and ordinary least squares regression may be used to estimate the coefficients for the model with a single error term due to

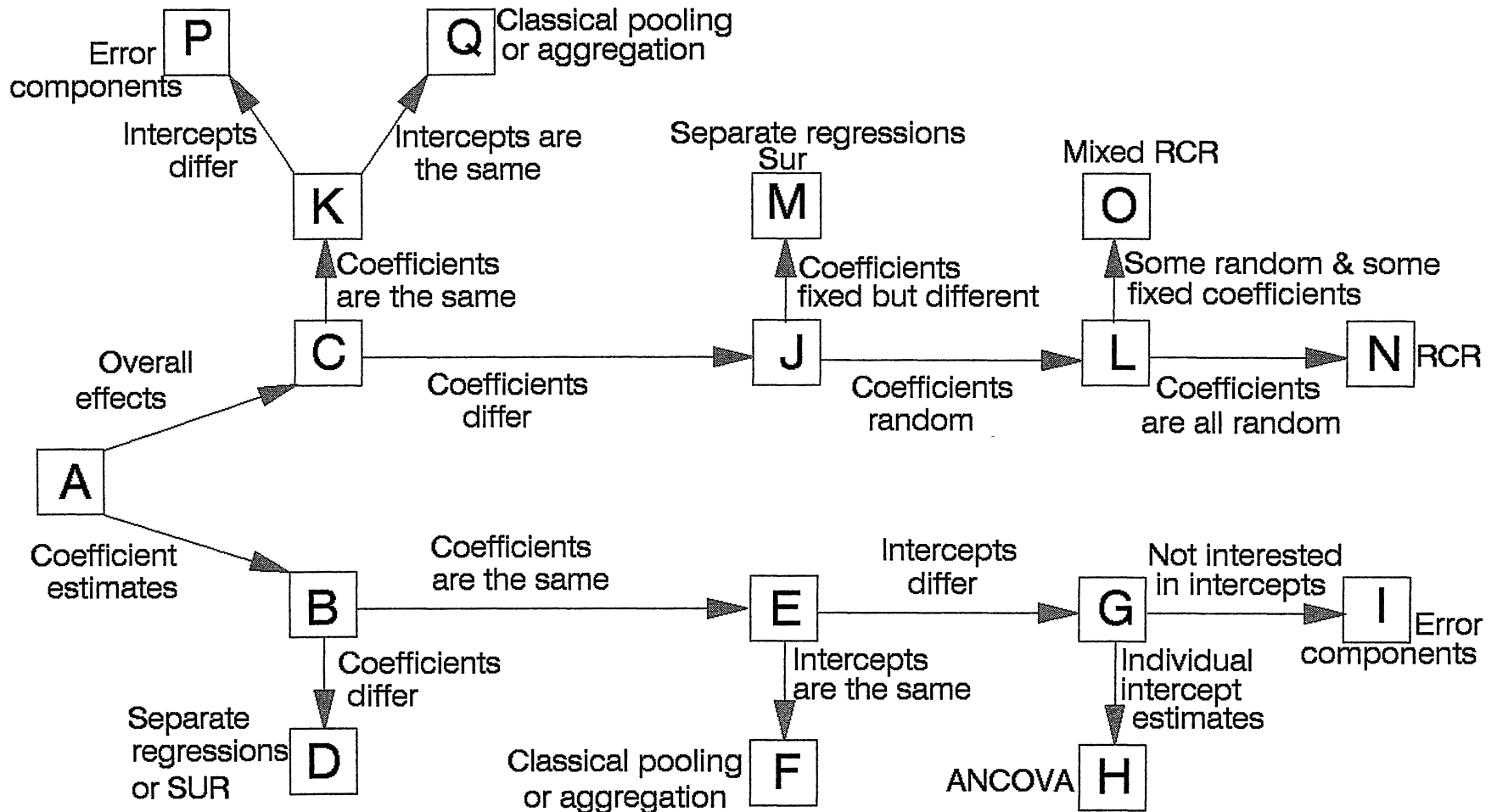


Figure 1. Decision Tree for Regression Models

sampling variation--point Q on the decision tree. This is not a realistic assumption in this instance because firm's responses will differ depending on managements' attitudes toward the standards for translation, the conditions in the different countries in which their investments are situated, and their prior exposure to foreign exchange risk.

A modification of this aggregation technique makes the assumption that while coefficients for the independent variables are the same across subjects, there is a difference due to an inherent difference in the subjects. In financial data this difference might be an industry effect. In this case the basic aggregation model may be modified to:

$$Y_{it} = a + b X_{it} + c W_{it} + e_{it}$$

where:  $W_{it} = \begin{cases} 1 & \text{if firm } i \text{ is in industry } 1 \\ 0 & \text{otherwise} \end{cases}$

This model can be restated as  $Y = (a + c W) + b X + e$  which simply shifts the intercept for industry effects but still assumes a constant slope for the regression lines. It also requires the estimation of an additional parameter for each industry or cross sectional unit, leaving fewer degrees of freedom for tests of significance.

Maddala [1977] states that the coefficients of the dummy variables for each industry or cross sectional unit are not interpretable because there is no specification of the nature of the variable which cause the regression line

to shift. He terms this a "specific ignorance" which may as well be treated the same as our other "general ignorance" which is  $e$ , the error term. In this event  $c$  would be a normally distributed random variable with mean zero and an unknown variance. This variation of the model is the error components model--P on the decision tree.

Both the aggregation and error components models assume the slope of the linear regression, or the coefficients of the independent variables, are unchanging over cross sectional data. This is not a reasonable assumption in the present study. Intercepts will differ because of firm size, prior financing activities, and individual and industry risk. The coefficients for the independent variables are expected to differ between individual firms for several reasons. Some firms may be more (or less) flexible in their ability or desire to alter financing arrangements because of pre-existing long term debt covenants, exchange restrictions, credit rating, and company policy. This causes a move to decision box J on Dielman's decision tree.

Dielman states that no statistical test is known to assist in making a decision between Seemingly Unrelated Regressions (SUR) and Random Coefficients Regression (RCR) at point J. If SUR is chosen, separate regressions are performed for each firm. An unspecified averaging technique must then be selected to determine the pooled coefficient estimates and to test to see if the means of

the individual equation coefficients are significantly different from zero. Separate regressions analysis also requires the estimation of a great many parameters, leaving fewer degrees of freedom for tests of significance. Separate regressions analysis is not considered a particularly fruitful approach by Dielman and he suggests that random coefficients regression (RCR) offers a better method for analysis. The nature of the subjects and data in this study indicates that RCR is the most appropriate analysis method.

RCR treats all coefficients as random variables, allowing variation in both the intercept and slope coefficients. Using each time period and each cross sectional firm as a sample in estimating the parameters of the population greatly expands the base of the data and allows the researcher to make inferences about the population means and variances. RCR is considered especially useful in studying the impact of policy variables where the policy is considered to enter into decision making rather than having a strictly additive effect. [Maddala, 1977]

The procedure used is based on Swamy's [1971] model as described by Maddala [1977]. The program was written using Time Series Processor Version 4.1B at TSP International, Palo Alto, California. Four basic steps are performed.

1. Ordinary least squares (OLS) estimates are computed for each of  $N = 50$  cross sectional firms over  $T = 12$  time periods.

$$y_{1j} = b_1 x_{1j} + u_{1j} \quad \begin{array}{l} i = 1, 2, \dots, N \\ j = 1, 2, \dots, T \end{array}$$

2. Generalized least squares (GLS) is used to estimate the group coefficients.

$$\hat{\beta} = \sum_{i=1}^N w_i \hat{\beta}_i$$

3. Weights are computed for pooling the group coefficients:

$$w_i = \frac{1/[\delta^2 + \sigma_1^2/(X_1'X_1)]}{\sum_{j=1}^N \{1/[\delta^2 + \sigma_j^2/(X_j'X_j)]\}}$$

These weights are inversely proportional to the variances of the OLS estimates.

4. The population parameters in steps two and three above are estimated by GLS; OLS estimators would be consistent but not efficient because the variance is not constant. Since  $\sigma^2$ , the variance of the error; and  $\delta^2$ , the variance of  $\beta_1$  are not known, they are estimated by using preliminary consistent estimators from the OLS equations in step one above.

$$\hat{\sigma}^2 = \frac{1}{T} \hat{u}_1' \hat{u}_1$$

$$\hat{\delta}^2 = \frac{1}{N} \sum \hat{\beta}_i^2 - \left( \frac{1}{N} \sum \hat{\beta}_i \right)^2$$

T statistics are provided by the analysis to test for significance of coefficients. In this analysis the significance of the coefficient on the dummy variable indicates the strength of the relationship between the change in the ratio of foreign currency denominated debt to total long term and the ratio of short term debt to

total debt with the change in the accounting standard. The variance of this coefficient indicates the variation from firm to firm.

Chapter V describes the results of the tests which were performed. The implications of the test results, a critique of the study, and some suggestions for future research are discussed in the final Chapter.

## CHAPTER V

### RESULTS OF THE EXPERIMENT

#### Ordinary Least Squares Results

In the first step of the analysis process, OLS regressions were found for each of the individual companies to obtain preliminary estimators for use in the RCR analysis. As explained in Chapter IV, the results of the OLS regressions are unbiased but they are not efficient because of the autocorrelation of errors in time series data. Table III, on the following page, summarizes the signs of the coefficients for the dummy variable, FAS, and the number of statistically significant results for the individual company regressions.

A positive coefficient was expected for FAS in the test for FCLTD/TLTD. If companies were averse to using foreign currency denominated long term debt simply because of the reporting requirements of Statement No. 8, an increase in the ratio of FCLTD to LTD would be expected after the firm changed to Statement No. 52. As evidenced by Table III, approximately one half of the sample firms have positive coefficients for FAS and half have negative coefficients. This may be partially attributable to the inefficiency of OLS estimators in time series data.



TABLE III  
RESULTS OF THE OLS REGRESSIONS  
OF INDIVIDUAL COMPANIES

Sign of Coefficient for FAS	Number of Companies	Significant at 0.05	Significant at 0.10
<u>FCLTD/TLTD</u>			
+ (expected)	26	5	8
-	21	3	4
0	3	-	-
Total	50	8	12
<u>STD/TD</u>			
+	26	3	5
- (expected)	24	6	8
Total	50	9	13

A negative coefficient was anticipated for the ratio of STD to TD. If firms used more and costlier short term debt to control accounting exposure while Statement No. 8 was in effect, the relief from recognizing translation gains and losses provided by Statement No. 52 should have resulted in a reduction of the use of short term borrowing. Again, it is apparent from Table III that there was no discernable difference in the sign of the coefficient and that very few of the regression

coefficients were statistically significant. Appendix C lists the companies for which the coefficient for FAS was statistically significant and their rank by size among the 150 companies from which they were selected.

As part of the estimating process for RCR an overall OLS pooling of the data was performed for both FCLTD/TLTD and STD/TD. The results of these OLS regressions are summarized in Table IV, on the following page. OLS provides inefficient estimators and over estimates  $t$  statistics in the presence of high positive autocorrelation. The results for both FCLTD/TLTD and STD/TD clearly indicate the model and/or the method is not appropriate for analysis due to the high autocorrelation in the error terms.

The next step in the RCR estimation consists of a generalized least squares conversion of the OLS variance covariance matrix to arrive at the final RCR estimates.

TABLE IV  
 POOLED OLS ESTIMATES

---

FCLTD/TLTD =  $B_0 + B_1 \text{ FAS} + B_2 \text{ INT} + B_3 \text{ MERM}$

---

Parameter	Estimate	Standard Error	T Statistic	Prob > T
Constant	0.26503	0.07920	3.346	0.0009***
FAS	0.03039	0.21737	1.398	0.1626
INT	-0.00565	0.00234	-2.416	0.0160**
MERM	-0.00080	0.00067	-1.205	0.2285

R-square = 0.0109

1st order autocorrelation = 0.709

---

STD/TD =  $B_0 + B_1 \text{ FAS} + B_2 \text{ INT} + B_3 \text{ MERM}$

---

Parameter	Estimate	Standard Error	T Statistic	Prob > T
Constant	0.35989	0.11494	3.131	0.0018***
FAS	0.01089	0.03154	0.345	0.7301
INT	0.00154	0.00339	0.455	0.6494
MERM	-0.00071	0.00097	-0.731	0.4651

R-square = 0.0018

1st order autocorrelation = 0.771

---

\*\*\*significant at 0.01

\*\* significant at 0.05

\* significant at 0.10

#### Random Coefficients Regressions Results

The initial OLS estimators, discussed above, were the first step in the RCR estimation. They were used to complete the RCR estimates summarized in Table V on the following page.

TABLE V  
RANDOM COEFFICIENTS REGRESSIONS RESULTS

---


$$\text{FCLTD/TLTD} = B_0 + B_1 \text{ FAS} + B_2 \text{ INT} + B_3 \text{ MERM}$$


---

Parameter	Estimate	Standard Error	T Statistic	Prob > T
Constant	0.18190	0.06752	2.994	0.0027***
FAS	0.00440	0.01834	0.240	0.8104
INT	-0.00487	0.00266	-1.833	0.0710*
MERM	-0.00009	0.00045	-0.210	0.8336

---

$$\text{STD/TD} = B_0 + B_1 \text{ FAS} + B_2 \text{ INT} + B_3 \text{ MERM}$$


---

Parameter	Estimate	Standard Error	T Statistic	Prob > T
Constant	0.29160	0.09629	3.029	0.0018***
FAS	-0.00495	0.02302	-0.215	0.8297
INT	0.00233	0.00361	0.644	0.5196
MERM	-0.00014	0.00066	-0.206	0.8367

---

\*\*\*significant at 0.01  
\*\* significant at 0.05  
\* significant at 0.10

The null hypothesis for H1, firms affected by Statement No. 8 and Statement No. 52 made no change in the proportion of foreign currency denominated long term debt to total long term debt after implementing Statement No. 52, cannot be rejected as a result of this study. The sign of the coefficient for FAS is positive as expected but the t statistic is not statistically significant. Only the constant and the coefficient for INT are statistically significant in the regression equation. The

failure to reject the null hypothesis means that no significant linear relationship FAS and the ratio FCLTD/TLTD was observed in this study.

The null hypothesis for H2, firms affected by Statement No. 8 and Statement No. 52 made no change in the proportion of short term debt to total debt after implementing Statement No. 52, also cannot be rejected. The sign of the coefficient is negative as was anticipated but it also is not statistically significant.

In the following section a brief summary is presented. A discussion of the implications of the study, its limitations, and suggestions for future research then conclude this work.

## CHAPTER VI

### SUMMARY AND DISCUSSION OF RESULTS

#### Summary of the Study

Many firms lobbied for relief from the reporting requirements of Statement No. 8. Surveys reported that firms often made financing decisions to avoid the accounting exposure imposed by that standard. Among those decisions which they claimed were costly were the choice to use less foreign currency denominated debt and the choice to use more short term debt, to allow more flexibility in hedging accounting exposure. A few studies cited in Chapter II reported finding negative abnormal returns for firms affected by Statement No. 8, implying that the cash flows of such firms were affected.

If financing or other changes are made, such changes are costly and they affect future cash flows. Thus, mandatory accounting changes may indirectly affect cash flows. Costly financing changes would justify attributing negative abnormal returns to the mandatory accounting standard. If these financing or other changes do not occur, then any observed negative abnormal returns may be primarily associated with other economic or political variables.

Tests for changes in the use of foreign currency denominated debt with respect to total long term debt and for changes in the use of short term debt with respect to total debt under Statement No. 8 and Statement No. 52 were performed using Random Coefficients Regression. Although the signs of the coefficient for FAS were positive for FCLTD/TLTD and negative for STD/TD as expected, no statistically significant effect was observed for either relationship.

#### Implications of the Results

Failure to reject the null hypotheses of no change does not necessarily mean that no changes occurred. The power of the tests may have been too low to detect the change. Both a visual observation of the data and the individual companies' OLS results indicate that some companies did change their debt ratios after the adoption period for Statement No. 52, 1980 through 1983.

The economic environment of the test period makes it difficult to measure change and detect the causes of change. Interest rates and exchange rates were extremely volatile throughout the twelve year period studied. These factors made operating in any environment, especially an international one, difficult. This volatility in the economy may have caused management to believe that it was the accounting standard which made financing decisions more difficult or made their financial statements

misleading and to lobby for change. And, it may also have caused them to attribute some of their financing decisions to the accounting standard rather than to the economic conditions of that time.

Previous studies have not attempted to control for economic variables. In cases where changes in abnormal returns were observed and attributed to the change in standard [Salatka, 1989; Ziebart and Kim, 1987], the researchers conceded that the observed change may also have been the result of omitted economic variables. In the present case, where some of these economic variables were controlled, it is possible that changes occurred but were confounded by extreme contemporaneous economic changes.

It may also be that a semi-strong efficient market was more concerned with how sharply rising interest rates would affect future cash flows than with what a cosmetic change in an accounting standard would do to cash flows. This would explain the negative abnormal returns found by Dukes [1978] for all multinational firms, even those that had used the requirements of Standard No. 8 prior to its mandatory adoption by all firms. Multinational firms would have had these same concerns about rising interest rates. In this study the coefficient for INT was negative and highly significant in the OLS test for FCLTD/TLTD and negative and significant at 0.10 in the RCR analysis. This significance is not directly interpretable because of



the use of a ratio for the dependent variable, but INT does appear to have some relationship to FCLTD/TLTD.

If firms had a foreign net liability position while Statement No. 8 was in effect, translation gains would have been reflected in their financial statements for 1976 and 1977, and losses for 1978 through 1980. Under political cost theory as described in Chapter III and as has been established in several empirical studies [Watts and Zimmerman, 1990], large firms prefer accounting methods which smooth or minimize income and lobby for such standards even though lobbying is costly. Managers also choose those contracts which either maximize all parties' wealth or their own wealth. They would probably not select a term or denomination of debt which is not optimal just to avoid recognizing a gain or loss in the financial statements as long as other contracts, such as bonus plans and debt covenants, can be renegotiated.

If the null hypotheses are correct, this would be of importance to the Financial Accounting Standards Board, the Securities Exchange Commission and other special oversight groups charged with the responsibility for establishing accounting standards. Policy formulation is highly political. Corporate managers and large accounting firms have been successful in dictating standards in their own self interest over the years. In cases such as the investment tax credit, successful efforts accounting, price level adjusted financial statements, consolidated

financial statements, and translation of foreign financial statements these policy making bodies have had to retract or alter pronouncements to suit the demands of lobbyists and the legislature. If many of the lobbyists' claims could be rejected as false, policy making bodies would be less subject to preparer dominance.

In summary, no statistically significant change was detected in either FCLTD/TLTD or STD/TD as a result of the mandatory change in accounting standards. This does not establish the null hypothesis that no change occurred, even though there are several explanations from contracting cost and political cost theory which suggest the null hypothesis may indeed be correct.

#### Contributions

This study contributes to the understanding of the economic consequences of accounting changes. Two financing changes which firms claimed they had made in response to Statement No. 8 were not confirmed. This finding suggests that the difficult economic conditions which necessitated the change in standard may have led firms to the actions which they attributed to the change in standard.

This study used a statistical test which is relatively new to accounting research. RCR has had some use in marketing and finance research, but it could have many more applications in accounting events studies. The

limited usage to date is probably because RCR is not readily available in commercial regression programs and it requires a considerable amount of programming. When RCR does become available it should have many applications in accounting research because of its ability to process autocorrelated data.

#### Limitations

The failure to obtain significant results in the study cannot be assumed to mean that the financing changes tested for did not actually occur. The nature of accounting data makes it difficult to use in quasi-experimental studies. Accounting data are by their nature autocorrelated. They are also subject to some degree of measurement error due to the use of estimates in accrual accounting and some freedom in accounting method choice.

Only data from large public firms were used in the study. The reason for this was that these firms are the most subject to political costs and that they represent nearly all of the foreign investment and business conducted from the United States. However, it means that anything implied by this study should not be extended to small or nonpublic firms without further study.

#### Issues for Future Research

No similar research has appeared to either confirm or deny the results of this study. It may be useful to

replicate the test using other time-varying operations or non-linear models. These might yield more insight than did RCR.

Another possibility is to restructure the hypotheses to test for no effect. A confirmed no effect finding would be useful to policy makers who are subjected to the political pressures of statement preparers and users.

Studying the effects of accounting changes while considering the contemporaneous economic conditions was stressed in this project. These conditions may be the true cause of observed effects. It would extend knowledge of economic consequences if earlier tests were reconsidered in light of economic conditions.

#### Conclusions

Firm behavior and management actions cause economic consequences, not mandatory accounting standards. This examination of two changes in financing decisions attempted to link specific actions with the negative abnormal returns believed to have occurred as a result of a new mandatory accounting standard. The results failed to confirm those changes. If such changes were made, they were probably not extensive and were dependent upon the previous investment and financing policies of each individual firm.

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## APPENDIXES

APPENDIX A

COMPANIES INCLUDED IN STUDY IN  
ORDER OF 1985 FOREIGN SALES

	Foreign Sales (\$ Mil.)	As % Of Total Sales
Exxon	\$ 62,750.0	71 %
Mobil	34,982.0	59
Texaco	21,864.0	47
Ford Motor	15,995.0	30
General Motors	14,534.3	17
Dow Chemical	6,326.0	55
American Brands	3,930.3	56
Proctor & Gamble	3,625.0	26
Philip Morris	3,545.0	22
Xerox	3,206.8	36
Goodyear	3,147.8	33
American Express	2,749.0	23
Union Carbide	2,632.0	29
3 M	2,594.0	33
Chrysler	2,488.3	12
CPC International	2,372.9	56
Burroughs (Unisys)	2,203.2	44
Monsanto	1,923.0	29
Motorola	1,818.0	27
Pfizer	1,681.9	42
Honeywell	1,646.8	25
Gillette	1,375.2	57
Bristol-Myers	1,314.8	28
TRW	1,260.0	21
Kimberly-Clark	1,134.9	27
Amerada Hess	1,128.0	15
Dresser Industries	1,079.9	26
Firestone	1,063.0	28
Eli Lilly	1,039.0	32
Rockwell International	957.0	8

Continued

Abbott Laboratories	\$ 950.0	28 %
Deere	898.0	22
Litton Industries	870.0	19
Schering-Plough	803.4	42
Ralston Purina	753.1	13
Emhart	742.7	42
Wang Laboratories	735.7	31
Baker International	730.9	38
Campbell Soup	716.1	18
Allegheny International	703.6	34
Sterling Drug	668.6	37
Eaton	659.0	17
Mattel	571.9	54
Polaroid	528.0	42
Celanese	512.0	19
Fruehauf	512.0	18
Libbey-Owens-Ford	507.5	26
B. F. Goodrich	493.4	15
IC Industries	487.9	11
Hercules	<u>476.0</u>	18
Total	<u>\$219,686.9</u>	

APPENDIX B

COMPANIES EXCLUDED FROM STUDY IN  
ORDER OF 1985 FOREIGN SALES

	Foreign Sales (\$ Mil.)	As % Of Total Sales
IBM	\$ 21,545.0	43 %
Philbro-Salomon	15,100.0	54
DuPont	11,429.0	32
ITT	7,327.0	37
Chevron	7,154.0	16
Amoco	5,984.0	21
R.J. Reynolds (Nabisco)	4,462.0	26
Safeway	4,260.6	22
Schlumberger	4,136.0	68
Occidental Petroleum	4,068.3	25
Eastman Kodak	3,239.0	30
Phillips Petroleum	3,125.0	20
General Electric	3,112.0	11
United Technologies	3,071.1	20
Coca-Cola	2,995.9	38
Hewlett-Packard	2,809.0	43
Sun	2,755.0	18
Beatrice	2,689.0	21
Tenneco	2,665.0	17
Dart & Kraft	2,629.7	27
Pan Am	2,590.8	74
Johnson & Johnson	2,431.4	38
Colgate-Polmolive	2,353.7	52
F.W. Woolworth	2,335.0	40
American International	2,252.7	39
GTE	2,169.0	14
Atlantic Richfield	2,138.0	9
Allied-Signal	2,047.0	22
NCR	1,965.3	46
Unocal	1,833.7	15

Continued

Trans World Airlines	\$ 1,607.2	44 %
Sperry	1,595.0	28
Merck	1,588.6	45
U.S. Steel	1,578.0	8
Sara Lee	1,510.3	19
Texas Instruments	1,418.0	29
Caterpillar	1,403.0	21
Halliburton	1,399.9	29
H. J. Heinz	1,386.3	34
W. R. Grace	1,320.0	25
Mc Dermott	1,250.4	39
Control Data	1,178.8	23
American Cyanamid	1,169.8	30
Warner-Lambert	1,162.0	41
HNG/Internorth	1,142.3	11
Smithkline Beckman	1,054.5	31
American Home Products	1,047.8	22
Continental Corp.	1,031.4	20
Pepsico	951.9	12
PPG Industries	934.0	21
American Standard	930.0	31
Quaker Oats	926.9	28
A&P	922.6	16
Westinghouse	904.3	8
Avon Products	887.9	36
Murphy Oil	867.3	34
Kellogg	855.2	29
United Brands	852.9	26
Borden	832.3	18
Champion International	826.2	14
Borg-Warner	800.1	20
McDonald's	789.9	23
CBI Industries	779.4	50
Ingersoll-Rand	754.5	29
RCA	742.8	8
Flour	742.1	18
NL Industries	737.7	47
Squibb	728.7	36
Texas Eastern	721.3	13
AMP	710.1	43

Continued

Dana	\$ 698.1	19 %
Emerson Electric	698.0	15
Castle & Cooke	690.0	35
Black & Decker	684.8	40
Rohm & Haas	667.0	33
Diamond Shamrock	652.1	16
Merrill Lynch	640.0	9
Upjohn	633.0	32
Armco	626.7	17
Anderson Clayton	625.7	34
Transworld	588.3	27
Alcoa	580.3	11
Baxter Travenol	576.0	24
Owens-Illinois	566.1	15
National Semiconductor	563.9	32
CBS	554.3	12
Engelhard	552.4	24
Crown Cork & Seal	552.1	37
Ocean Drilling	531.3	67
American Family	525.0	55
Lafarge	510.5	54
Foster Wheeler	499.0	41
Dun & Bradstreet	495.1	22
K Mart	493.5	2
Singer	483.6	20
Norton	472.1	40
Intel	471.5	35
Raytheon	449.0	7
Hughes Tool	446.2	35
Lubrizol	<u>431.0</u>	47
Total	<u>\$195,670.8</u>	

Note: The total of Appendix A and Appendix B is \$415.4 billion rather than \$414.9 billion as shown in the Business Week source material. This discrepancy is assumed to be due to rounding.

APPENDIX C

COMPANIES WITH STATISTICALLY SIGNIFICANT  
COEFFICIENTS FOR FAS IN OLS REGRESSIONS

FCLTD/TLTD

	Coeff. Sign	Rank In Sample	Rank in 150 Cos.
Baker International **	+	38	105
Burroughs (Unisys) *	-	17	42
Emhart **	-	36	101
Hercules **	+	50	145
IC Industries **	+	49	143
Mattel *	+	43	126
3 M **	+	14	34
Monsanto **	-	18	47
Philip Morris *	+	9	19
Ralston Purina **	+	35	99
Union Carbide *	-	13	32
Xerox **	+	10	21

STD/TD

	Coeff. Sign	Rank In Sample	Rank in 150 Cos.
Allegheny International **	+	40	110
Burroughs (Unisys) **	-	17	42
Campbell Soup *	-	39	108
CPC International *	+	16	38
Dresser *	+	27	72
Eaton **	-	42	117
Firestone **	-	28	73
Gillette *	-	22	61
Hercules **	-	50	145
Libbey-Owens-Ford **	+	47	138
Eli Lilly **	-	29	76
3 M **	+	14	34
Mobil **	-	2	2

\* Significant at 0.10

\*\* Significant at 0.05

2  
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