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THE IMPACT OF FOREIGN CURRENCY TRANSLATION METHOD CHANGE ON THE ACCURACY OF THE FINANCIAL ANALYSTS' EARNINGS FORECASTS

The University of Texas at Dallas PH.D. 1986

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CHANGE ON THE ACCURACY OF THE FINANCIAL

ANALYSTS' EARNINGS FORECASTS

by

Mehdi Sheikholeslami, B.S., M.A.

DISSERTATION

Presented to the Faculty of

The University of Texas at Dallas

in Partial Fulfillment

of the Requirements

for the Degree of

DOCTOR OF PHILOSOPHY
IN
INTERNATIONAL MANAGEMENT STUDIES

THE UNIVERSITY OF TEXAS AT DALLAS

December, 1986

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To my lovely wife, Christine for
her continued love and support

ACKNOWLEDGEMENTS

I am very grateful and deeply indebted to my supervisory committee members: to Dr. Larry J. Merville whose generous guidance and support went far beyond that required of an advisor, to Dr. Stephen E. Guisinger for his many valuable insights and comments, to Dr. John Wiorkowski for providing expert guidance in the data analysis, and to Dr. Ho-Sang Kang for his encouragement.

Special thanks go to my family for their patience and understanding.

I wish to thank Mr. Rick McFerron of the Indiana University of Pennsylvania Computer Center for his cooperation.

Finally, I extend my appreciation to Mr. Kianing Yeo for his diligence in typing this dissertation.

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Prior research has shown that the change in accounting standards may have distributional consequences. Investors prefer the accounting methods that facilitate more accurate predictions of future earnings - investors' welfare is a positive function of their ability to predict future earnings. This study uses the financial analysts' earnings forecasts as a proxy for the unobservable market expectations, to test the hypothesis that the change in foreign currency translation rule from FAS8 to FAS52 has improved earnings forecasting. Forecast errors of a matched sample of multinational companies (MNCs) and domestic companies (DCs) for the period 1978-80 (FAS8) is compared with the forecast errors of the same companies during 1983-85 period (FAS52). The profile analysis of the data reveals results opposite to what was

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expected - forecast accuracy deteriorated after the change in foreign currency translation standard. However, since the change in forecast errors of the MNCs parallels the change in forecast errors of the DCs (control group) one cannot attribute the worsening of the forecast accuracy to a change in a single accounting standard.

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CHAPTER I

INTRODUCTION

The post World War II era witnessed a steady growth in the internationalization of U.S. business. During the period 1950-1983, U.S. multinational companies (MNCs) have expanded their foreign direct investments at an average annual rate of 9.6 percent.[1] More important was the higher growth rate of assets for affiliates than U.S. parents--13.6 percent compared with 10.5 percent during 1966-77.[2] The growing relative size of foreign activity coupled with the advent of the free float system of exchange rates has complicated the accounting for U.S. MNCs' foreign operations.

In October 1975, the Financial Accounting Standards Board (FASB) issued Statement of Financial Accounting Standards No. 8. "Accounting for the Translation of Foreign Currency Transactions and Foreign Currency Financial Statements," (FAS8), which proved to be the most controversial issue dealt with by FASB. Of the 205 letters of comment received by FASB in 1978, as part of an overall post-enactment review of all pronouncements, 86 percent addressed FAS8. FAS8 required use of the temporal translation method along with immediate recognition in income of translation gains and losses. FAS8 was extensively criticized for causing erratic movements in reported earnings which allegedly disturbed

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trends and made the job of forecasting earnings far more difficult.

Under pressure, in December 1981, FASB issued Statement of Financial Accounting Standards No. 52. "Foreign Currency Translation," (FAS52) which superceded FAS8. FAS52 introduces the concept of the "functional currency" to determine the recognition of foreign currency translation gains, losses and adjustments. According to the criteria set forth in the statement, the functional currency in the case of a foreign subsidiary that is an independent, cash-generating center will be the local currency; in most other cases, the functional currency will be the dollar.

If management chooses the dollar as the functional currency, then the translation process under FAS52 is essentially the same as under the old FAS8: The temporal method is used, and gains or losses resulting from translation are included in income for the period. On the other hand if local currency is chosen as the functional currency, then FAS52 requires use of the current rate translation method and deferral of translation gains and losses by placing them on the balance sheet as a component of the stockholders' equity account, which allegedly will result in smoother earnings reports and greater predictability.

Accounting Alternatives and Earnings Forecast

The Statement of Financial Accounting Concept No. 1 (SFAC1), "Objectives of Financial Reporting by Business Enterprises," states that:

> Financial reporting should provide information to help present and potential investors and creditors and other users in assessing the amount, timing, and uncertainty of prospective cash receipts from dividends or interest and proceeds from sale, redemption, or maturity of securities or loans.
>
> (Par. 37)

SFAC1 further clarifies that:

> Although investment and credit decisions reflect investors' and creditors' expectations about future enterprise performance, those expectations are commonly based at least partly on evaluations of past enterprise performance.
>
> The primary focus of financial reporting is information about earnings and their components.
>
> (Par. 43)

The above statements imply some kind of relationship between current earnings, future dividends and securities prices. Considerable accounting research has been devoted to analyzing this relationship between accounting data and contemporaneous security prices. A conceptual framework that explains this relation is provided by the information perspective on accounting. This framework involves an information link, between accounting data and the future stream of benefits from an equity investment, and a valuation link, between the future benefits and security price (see Ohlson, 1979; and Garman and Ohlson, 1980 for a formal presentation of this conceptual framework).

Beaver (1981) develops a conceptual relationship between accounting earnings and common stock price by introducing three critical links:

1. The link between security price and future dividends.

2. The link between future dividends and future earnings.

3. The link between future earnings and current earnings.

Regarding the first link, "Price can be characterized as if it were a function of the expected value of future dividends." (Beaver 1981, p. 103)

With respect to the second link, Beaver assumes a perceived relationship between future earnings and future dividends, e.g., via a constant pay out ratio.

With regard to the third link, Beaver notes that the current earnings has two components: permanent earnings and transitory earnings. He further defines permanent earnings as the expected value of future earnings. If this is true, then one can offer the following propositions:

.   1. The permanent component of earnings plays a more important role than the transitory component in valuation of securities. This proposition is consistent with extant security valuation models (see for example Miller and Modigliani, 1961). Some empirical support for this hypothesis is provided by Ronen and Sadan (1981).

2. Prediction of future earnings is affected by the choice of accounting method. The accounting method that provides earnings with smaller transitory component (e.g. noise) facilitates more accurate prediction of future earnings. Therefore, one can compare alternative accounting methods by their resultant earnings components.

Research by Ball and Watts (1972), Albrecht, Lookabill and McKeown (1977) and Watts and Leftwich (1977) seem to suggest that annual accounting earnings behave as a random walk. One implication is that earnings classification is meaningless since no transitory component exists, and thus no improvement in predictive ability is expected. However, Beaver, Lambert, and Morse (1980) present evidence consistent with earnings being perceived as a compound process consisting of both a persistent and a transitory component, when viewed from the perspective of other information reflected in security prices. Attempting to reconcile these contradictory pieces of evidence, Beaver et al suggested that the near zero serial correlation in earnings differences, reported in past research, resulted from opposite sign serial correlations associated with the persistent and transitory components.

In the area of foreign currency translation accounting, FAS8 was severely criticized by the managers of the multinational companies who responded to the May 1978 request by FASB to comment on FASB standards.

It is evident from the letters of comment that the dissatisfaction of managers with Statement 8 could be largely attributed to two provisions that sometimes caused significant changes in reported earnings, at odds with 'economic reality.' In other words, the changes were seen as incompatible with the perceived economic impact of an exchange rate change on the firm's future cash flows. The first provision is the requirement to recognize immediately all gains and losses from foreign currency rate changes in the income statement, whether realized or unrealized. The concern of the critics was that such a provision unnecessarily increased the volatility of reported earnings. The second provision relates to the temporal method of translation. Executives in multinational companies argued that foreign operations are typically economically exposed in a net asset or long position. But since the temporal method requires fixed assets and most inventory to be translated at historical rates, while measuring liabilities abroad at current rates, the accounting exposure is usually a net liability or short position. Consequently, the accounting exchange gain or loss numbers are subject to an interpretation which implies the reverse of their probable economic impact.

(Griffin, 1982, p.51)

At this point we may pose the following questions:

1. Is concern over the earnings volatility justified?

2. Does the earnings volatility affect earnings predictability?

3. Has the change of foreign currency accounting rule from FAS8 to FAS52 increased forecast accuracy?

With regard to the first question, Gordon (1964) assumes that corporate stock prices are a function of the level, the rate of growth and the variance of accounting earnings changes (which implies that reported earnings variability is believed to be a critical factor in risk assessment). Hence, Gordon suggests that managers select accounting procedures to increase reported earnings and the growth rate of reported earnings and to decrease

the variance of earnings changes. The supporters of this view, "income-smoothing," claim that income of an entity can be determined only in the long run and that periodic income can be determined only by a collection of artificial rules (e.g. accrual accounting). Therefore, under this view, emphasis is on the long-run profitability. Periodic income is viewed as important not in itself but in its ability to reflect the long-run profitability of the enterprise. Thus, it is considered misleading and undesirable to incorporate factors that make income figures so volatile that their long-run trend is clouded (e.g. exclusion from net income of unrealized foreign exchange gain or loss).

The anti-smoothing view states that it is possible to take an accurate picture of an enterprise at the end of a period and, by comparing it with a picture taken at the beginning, it is possible to determine accurately the performance of an enterprise in a given period (this is analogous to economists' definition of personal income). Thus, the emphasis is on an accurate determination of the short-run income. Every factor that existed at the time when such an assessment was made, whether it was ordinary or extraordinary, permanent or temporary, should be taken into account in the determination of income (e.g. inclusion in net income of unrealized foreign currency exchange gain or loss). For empirical evidence on income-smoothing hypothesis, see Watts and Zimmerman (1986). Griffin (1982) reports that the foreign currency translation method change (to FAS8) had very

little impact on the annual and quarterly earnings of the average multinational company.

With respect to the second question, Beaver and Wolfson (1984) point out:

> Of course, the focus on earnings volatility is somewhat myopic. It is presumably motivated by concern over analysts' ability to predict earnings, the premise being that increased stability implies greater predictability.

(p. 28)

The alleged perceived association between earnings variability and earnings predictability could be the result of usage by capital market researchers of some measure of earnings variability (as an accounting risk surrogate) instead of inability to forecast earnings (see for example Ball and Brown, 1969; and Bowman, 1979). However, research by Barefield and Comiskey (1979) and Comiskey, Mulford, and Porter (1986) conclude that "it is inability to forecast and not earnings variability per se that constitutes a fundamental risk factor." (p. 257)

With respect to the third question, the functional fixation hypothesis maintains that individual investors interpret earnings numbers the same way regardless of the accounting procedures used to calculate them. One implication of the functional fixation hypothesis is that financial analysts do not discriminate between earnings calculated using different foreign currency translation rules. Ball (1972) provides evidence that the market does not take reported earnings numbers at face value and indeed discriminates the source of the earnings change.

Welfare Consequences of Accounting Method Change

According to SFAC1:

> The role of financial reporting in the economy is to provide information that is useful in making business and economic decisions, not to determine what those decisions should be. For example, saving and investing in productive resources (capital formation) are generally considered to be prerequisite to increasing the standard of living in an economy. To the extent that financial reporting provides information that helps identify relatively efficient and inefficient users of resources, aids in assessing relative returns and risks of investment opportunities, or otherwise assist in promoting efficient functioning of capital and other markets, it helps to create a favorable environment for capital formation decisions.
>
> (Par. 33)

The above statement implies the following:

1. Accounting data have "social value".

2. Financial reporting plays a major role in the acquisition/allocation of capital and the distribution of the returns thereof.

With respect to the first implication, the social value may have two interpretations. The first interpretation is that the information results in an increase in the aggregate quantity of goods and services supplied to the society independent of its effect on particular individuals (e.g. information has aggregate benefit). The second interpretation is that the information results in a Pareto improvement in the expected utilities of market participants (e.g., information has individual benefit). (Verrecchia, 1982).

However it is well recognized in the economics literature that information can have private value without having any social

value (Hirshleifer, 1971). In other words, the public disclosure of information has the potential to redistribute wealth. And we can envision a situation where the total social cost of production/utilization of information is more than the total social benefit (e.g., one disclosure policy is inferior to an alternative if its employment can lead to a redistribution of wealth which will reduce total welfare).

With regard to the second implication, there are two kinds of securities market agents: investors (users of financial information) and managers of widely held corporations (preparers of financial information). Investors prefer one accounting standard to an alternative if its employment aids them to make more accurate predictions of enterprises' earnings. Managers on the other hand prefer the accounting standards that result in smoother earnings numbers (most executive incentive compensation plans' formulas are based on accounting earnings numbers with an upper bound. For example if the upper bound is a percentage of a return on shareholders' equity, managers have an incentive to report earnings equal to that return each year).

Since earnings stability does not necessarily imply greater predictability, members of the two groups have conflicting interests regarding the provision of financial information. The existence of the unavoidable conflicting individual interests presents difficult collective choice problems. Private sector standard setting (e.g., FASB) is one mechanism to resolve the collective choice problem. However any

centralized resolution of a collective choice problem may have

distributional consequences (Mueller, 1979).

According to SFAC1

Financial reporting should provide information that is useful to present and potential investors and creditors and other users in making rational investment, credit, and similar decisions. The information should be comprehensible to those who have a reasonable understanding of business and economic activities and are willing to study the information with reasonable diligence. (Par. 34)
SFAC1 further states that:

The objectives stem primarily from the informational needs of external users who lack the authority to prescribe the financial information they want from an enterprise and therefore must use the information that management communicates to them.
(Par. 28)

The above statement implies that the user group is at an

informational disadvantage vis-a-vis managers (e.g., managers

possess insider information which they can use to earn an

abnormal rate of return). Therefore the standard setting body

(FASB) should promulgate standards which are in the interest of

the users. More specifically the user group should have a claim

to the content of financial reporting standards which is superior

to the claims of the preparers. Hence user primacy becomes a

constitutional claim. (Gaa, 1986)

At this time, we have the basic elements of a simple

model to explain and predict the welfare impact of the change in

accounting standards. Our model is based on the following

assumptions:

1. Current accounting earnings facilitate the forecast of future earnings, and hence assessment of relative returns and risks.

2. Different accounting methods provide different earnings numbers which can lead to different levels of accuracy in prediction of future earnings.

3. The user's welfare is a positive function of his/her ability to predict future earnings.

4. Market participants can access a broader information set than just the published financial reports. For instance, they can obtain information about macroeconomic forecasts, the competitive structure of a firm's industry, events such as acquisitions, divestures, and strikes; and they can even make company visits, etc. However, individual investors do not have the incentive to engage in information search themselves (the cost of information is much higher than the expected benefits). The individual investor can purchase the same information from financial analysts at much lower cost.

5. Change in accounting standards has the potential to redistribute wealth and/or reduce total welfare. For example when a finer information system (in terms of predictive-ability) is replaced by a coarser information system, the individual investor has to pay more for the services of the financial analyst (note that the financial reports by companies are public goods, which imply zero cost to the users. However, when the quality of this free information declines, users have to employ

more of the costly private information). The impact on potential investor's wealth is obvious - his wealth declines. The impact on the analyst depends on the comparison of the additional cost (adjustment cost) he incurs with the additional price he charges. Therefore the analyst could be better off, neutral or worse off. Another potential consequence of change in accounting method is the possibility of redistribution of wealth from existing stockholders to the management. For example, manipulation of earnings stream which maximizes the expected utilities of the managers could have adverse effects on stock prices. And finally the welfare impact on the society depends on the difference between the total incremental costs (e.g., resources consumed by the FASB, additional production/adjustment costs by the companies, and additional utilization/search costs by the users) and the total incremental benefits.

The concern of this study is the link between current earnings and future earnings under alternative foreign currency translation rules. The accounting method that facilitates more accurate forecast of future earnings will improve the investors' welfare. Since investor earnings expectations are not directly observable, the analysts' forecasts under FAS52 and analysts' forecasts under FAS8 will be compared by testing the hypothesis that FAS52 has increased forecast accuracy. According to our model, the finer information system (FAS52) implies less demand for the services of the financial analysts by the investors. Therefore in order to stay in business, the analysts have to

provide earnings forecasts that are substantially more accurate than before. Significant improvement in forecast accuracy of analysts implies improvement in the welfare of the investors. This would be encouraging feedback to the accounting policy makers at the SEC and the FASB. Failure to observe significant improvement in forecast accuracy is problematic. That is, one could not conclude that there had been no effect--only that, if there was an effect, the research design did not identify it. Pragmatically, one would conclude that the FAS52 is not in the interest of the investors.

Chapter Two is a review of alternative methods of accounting for foreign operations. Chapter Three reviews the empirical research on the effects of change in foreign currency translation method (primarily FAS8). Chapter Four describes the methodology (repeated measure design, matched sample, and profile analysis). Chapter Five presents the results, and Chapter Six contains the summary and conclusions.

CHAPTER II

ACCOUNTING FOR FOREIGN OPERATIONS

Definitions

Staubus (1985) defines accounting as a set of activities focused on economic entity and concerned with the information regarding the economic effects of events on the entity. He further views the "accounting entity" as an economic unit under one management; hence the scope of the management's power determines the boundaries of the entity. Caves (1983) in a similar fashion defines MNC as an economic unit that controls and manages production facilities located in at least two countries.

Objectives

The Statement of Financial Accounting Concept No. 1, (SFAC1) "Objectives of Financial Reporting by Business Enterprises," states that:

> Financial reporting should provide information about the economic resources of an enterprise, the claims to those resources (obligation of the enterprise to transfer resources to other entities and owner's equity), and the effects of transactions, events, and circumstances that change its resources and claims to those resources.
>
> (Par. 40)

Stabus (1985) notes that accounting is concerned with identifying, measuring, classifying and reporting stocks and flows of wealth so as to provide information on income,

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liquidity, risk, and other aspects of wealth. He also observes that the stability of the related income statement line items, conservatism, and flexibility and control of income measurement by management are qualities frequently associated with the measurement method chosen by accounting.

Multinational companies will have foreign currency denominated assets, liabilities, revenues, and expenses. However, because home country user groups of financial statements are interested in home country values, the foreign currency balance sheet accounts and income statement numbers must be assigned home currency values. In particular the financial statements of a MNC's overseas subsidiaries must be translated from foreign currency to home currency values before consolidation with parent's financial statements. The consolidated financial statements then are generalizations designed to give a broad overview of the results of operations and financial position of the total related group of companies as though they were just one company operating in a world with only one currency. Therefore foreign currency translation methodology should fulfill the following requirements:

-To provide financial information that is consistent with the underlying economic development of interest to the user groups (e.g., the effect of exchange rates on the home currency market value of foreign subsidiary).

-To provide financial statements of the foreign subsidiary that are comparable to the financial statements of the domestic parent and other domestic corporations.

Scott (1981) offers the following objective of accounting translation:

> Usefulness of financial information stems primarily from its predictive ability. That is, the reporting of past events and present status should provide information to facilitate prediction of the future. In most cases this entails evaluation of past earnings streams, cash flows, and other resources to facilitate prediction of future earnings streams. This evaluation is in turn predicated upon (and assumes) a particular, even if broadly defined, use of the resources held - that is, the measurement of value should be in terms of the way in which the resources are expected to be used since this is most likely to facilitate prediction of future earnings.

> The objective of accounting translation therefore should be to report foreign-held resource values after translation in the context of the economy in which they will be employed to generate a stream of future earnings since it is this earnings stream which is to be predicted. Because of fundamental changes in the conduct of international operations, for most foreign-held resources this economy will be the foreign economy, not the home-country economy since it is intended that most of these resources will remain abroad. For these resources, translation should involve only a change of the currency in which the financial information is stated and not a change of the context of the information.

> (p. 59)

Methods

The current/noncurrent method was originally formalized by Accounting Research Bulletin No. 4 (ARB4)[3] and subsequently reissued as Chapter 12 of ARB No. 43.[4] Under this method, the exchange rate existing on the balance sheet date is applied to

current assets and current liabilities, whereas historical exchange rates are used for all other balance sheet accounts. This method assumes that translation practices should be based on the maturity of balance sheet items. Since exchange rates could reverse direction in the long run, only working capital denominated in foreign currency is deemed to be at risk of devaluation. Income statement items (revenue and expenses) are translated at average exchange rates for the period, except for revenue and expense items relating to noncurrent assets and liabilities (e.g., depreciation) which bear the historical exchange rates of the corresponding items. According to ARB43, translation gains or losses are netted during the period, with net translation loss recognized while net translation gain is deferred.

The monetary/nonmonetary method was authorized by Accounting Principles Board Opinion No. 6.[5] Under this method, the exchange rate existing on the balance sheet date is applied to monetary assets and monetary liabilities, whereas historical exchange rates are used for nonmonetary assets, nonmonetary liabilities, and owners' equity. Instead of focusing on the maturity dates of balance sheet items, this method emphasizes their monetary character. The income statement translation and translation gains and losses treatment are basically similar to the procedures described under the current/noncurrent method.

The temporal method was mandated by FAS8. Under this method translation is simply a measurement conversion process

which should not change the attribute being measured. It translates assets and liabilities stated in past prices at historical exchange rates, and assets and liabilities carried at current or future prices at current exchange rates. The rationale for temporal method is that a parent company must translate every element of its foreign subsidiaries' financial statements as though it owned the individual assets and liabilities itself and had entered itself into all of the subsidiaries' transactions. To determine an appropriate translation rate, each item is considered separately. Income statement items are translated in a manner that produces approximately the same dollar amounts that would have been obtained had each transaction been translated into dollars on the date it occurred; if impractical an average rate for the period is permitted except for depreciation and amortization. FAS8 requires the immediate recognition and inclusion of translation gains or losses in the income statement.

The current rate method is also allowed by FAS52 which introduces the concept of the "Functional Currency" to determine the appropriate translation method and translation gains or losses treatment. An entity's functional currency is the currency of the primary environment in which it operates and in which it is expected to generate cash flows. Accordingly the functional currency in the case of a foreign subsidiary that is an independent; cash generating center will be the local currency; in most other cases, the functional currency will be the dollar. If the functional currency is the dollar, the translation method

and translation gains or losses treatment is essentially the same as under FAS8. If the functional currency is the local currency then the current rate method is applied; all assets and liabilities are translated at the closing rate, and translation gains or losses are not recognized in the income statement but are included in owners' equity as translation adjustments. Those who advocate this method believe that their foreign direct investment, that is, the net assets of their foreign entities, are exposed to the risk of devaluation. Income statement items are translated at an average rate for the period except for depreciation and amortization that require closing rate.

Problems

Scott (1981) employed DELPHI technique to identify the most important problems in international accounting. In the area of accounting for multinational operations, he reported the following problems:

> 1. In a world of shifting exchange rates, it is difficult to measure the economic effect of exchange rate changes on a particular company having dealings with foreign affiliates or other foreign operations, or the net effect of these rate changes on a system of interrelated companies in different countries; in some circumstances the swings in the parities of currencies are largely unrelated to the operation of affiliated companies in that country.
>
> 2. Translation gains and losses other than on currency conversion transactions-in-process often do not reflect economic reality.
>
> 3. Too many translation approaches are now in existence around the world.
>
> (p. 8)

To correct the above problems, Scott (1981) recommended the following studies:

> 1.   Understanding and measuring the economic effect of exchange rate changes on each country and on the companies within each country, and
>
> 2.   Establishing translation rules that enable the effects of exchange rate changes to be portrayed in their financial statements.
>
> (p.11)

The economic effect of exchange rate changes depends on the actual relationship between general/specific price levels, interest rates, and exchange rates. If the purchasing power parity holds, a country's depreciation hence the non-monetary (real) assets of the subsidiary in that country are free from exchange risk. If the Fisher "open" hypothesis holds, the nominal interest rates adjust to any changes in price levels and exchange rates to maintain a constant real rate of interest, hence the exchange losses on any monetary (financial) assets held by the subsidiary are offset by rises in the foreign interest rates they earn. However as Dufey and Srinivasulu (1983) conclude:

> In an idealized world, without information and transaction costs, explicit or implicit contract periods and other obstacles to instantaneous price adjustments, deviations from various equilibrium conditions such as purchasing power parity, the law of one price, and both the domestic and international Fisher effect would not occur; neither would firms be exposed to exchange risk. However, because real-world imperfections in markets for real goods and services as well as financial assets do exist, firms can be subjected to exchange risk.
>
> (p.61)

Adler and Dumas (1984) define exchange risk as the statistical likelihood that the actual domestic purchasing power

of home or foreign currency on a given future date will differ from its original anticipated value. If the direction, timing and magnitude of the exchange rate changes are known, and the future foreign currency value of inflows and outflows of each foreign subsidiary is also known, then the MNC can determine the future domestic currency value of cashflows of its foreign projects. Shapiro (1978) points out that the ultimate effect of exchange rate changes depends on the sector of the foreign economy in which the MNC operates (export, import-competing, or domestic) and the sources of its inputs (imports, domestic traded, or non-traded goods).

At the heart of the controversy over translation gains and losses is the interpretation of whether exchange gains and losses are realized (real) and, therefore, should be recognized. The all-inclusive income method requires the immediate inclusion of translation gains or losses in income; because exchange rate changes are historical facts and, more importantly, they can be predicted. Some disagreement exists, however, as to whether translation gains and losses should be included in income from operation or as an extraordinary item.

The deferral method is based on the contention that translation gains and losses are not "real" but "paper" gains and losses and stipulates that translation gains and losses should be recorded but not reflected in income. Accordingly these items are recognized as deferred charges or credits until they are realized

in income over the life of the asset or liability that gave rise to them.

The owners' equity adjustment method is based on realization principle in combination with the going concern assumption that certain translation gains and losses will never be realized. Accordingly the adjustment method necessitates a distinction between unrealized translation gains and losses that are expected to be realized and those which will only be realized upon sale or liquidity of the foreign entity. This method is appealing because it distinguishes between how well the MNCs· foreign subsidiaries do in their real economic transactions abroad and what happens to their operating results upon translation.

Beaver and Wolfson (1984) state:

Inasmuch as translation gains or losses capture at least some of the economic factors behind the systematic relation between interest rates and exchange rates, excluding them from an analysis of earnings can provide misleading performance measures. In effect, when transactions denominated in different currencies are economically alike, inclusion of gains and losses will result in their being treated alike. Conversely, when transaction are economically different, the inclusion of translation gains and losses will show them to be different.

(p. 28)

For example, the economic forces that led to a change in the exchange rate since the time of acquisition of a plant asset abroad are likely to have caused a change in the foreign currency market value or foreign currency replacement cost of that item as well. However, since the speed of adjustment is much faster in financial markets than in goods and services markets, the

exchange rate changes originated in financial markets might not cause appreciable changes in price levels at least in the short run (Dornbuch 1976).

Regarding the problem of identifying an appropriate translation rule(s), Choi and Mueller (1984) observe that in a world of floating exchange rates at least three translation rates can be identified. First, there is the current rate, which is the exchange rate prevailing as of the financial statement date. Second, there is the historical rate, which refers to the exchange rate prevailing when a foreign currency asset was first acquired or a foreign currency liability first incurred. Finally, there is the average rate comprising a simple or weighted average of either current or historical exchange rates. (p. 112)

Based on the assumption that the purchasing power parity holds, Beaver and Wolfson (1983) analyze the properties of three accounting models-translation methods: historical cost accounting-historical exchange rate (H/H), current value accounting-current exchange rate (C/C), and historical cost accounting-current exchange rate (H/C). The three alternatives are then analyzed in terms of economic interpretability and symmetry.

> Economic interpretability is defined as (a) the book values reported on the balance sheet are equal to the present values of the future cash flows of the assets, liabilities, and net worth of the firm; and (b) the reported return on investment (net income divided by beginning-of-the-year assets) is equal to the nominal rate of return on investment, denominated in terms of the domestic currency. Symmetry is defined as: two economically equivalent investments (e.g., one foreign, one domestic) produce the same financial statement numbers

when the investments are translated into a common currency. (p. 529)

The main conclusions of Beaver and Wolfson analysis are:

(1) With respect to the three major methods, (a) the C/C method possesses both economic interpretability and symmetry; (b) the H/H method possesses symmetry but not economic interpretability; and (c) the H/C method possesses neither property, except in trivial cases.

(2) The inclusion of the translation gain or loss is necessary to achieve either economic interpretability or symmetry.

(p. 529)

An interesting implication of the Beaver and Wolfson (1983) analysis which has also been stated elsewhere is that: "Many of the criticisms of translation methods are really criticisms of the results of translation, which are imperfect because of the original accounting principles." (Nobes 1980) For example, historical cost accounting is not compatible with current rate translation method (FAS52).

Choi and Mueller (1984) state that the translation problem has three dimensions:

1. Is it reasonable to employ more than a single translation method?

2. If so, what should the acceptable methods be and under what conditions should they be applied?

3. Are there situations in which translation should not be taken at all?

(p. 133)

With respect to the first question, they favor multiple translation methods. They claim that the economic circumstances underlying the translation from a stable currency to an unstable

currency is different from the translation from unstable currency to a stable currency.

With regard to the second question, they argue that subsidiary financial statements are translated from a parent perspective or from a local perspective. A parent perspective treats foreign subsidiary operations as an extension of the parent operations; therefore, foreign subsidiary transactions should be viewed as if they had occurred in the currency of the parent; and if this view is taken the historical exchange rates should be applied (e.g., FAS8). A local perspective is based on the assumption that the foreign subsidiary operation is an independent operation; therefore foreign subsidiary transactions are viewed as occurring in the local currency, and if this view is taken the current exchange rates should be applied (e.g., FAS52).

With respect to the third question, they prescribe no translation between highly unstable and highly stable currencies.

Referring to the diversity of MNC's translation practices prior to FAS8, Burns (1976) suggests that different translation methods may have given the least distorted views of the firms' performances in different market settings, so the standardization was achieved at the expense of each firm giving the public, on average, a noisier set of accounting signals than before.

Jacobi (1984) addresses another major problem, that of the unit of account in consolidated financial statements of MNC's. More specifically, he questions the use of the U.S. dollar

as the unit of account in consolidated financial statements of the U.S. MNCs. Jacobi's proposal, "a decision-oriented unit," is based on a categorization of MNCs. Ethnocentric MNCs manifest parent perspectives; therefore, currency of the parent should be the unit of account. Polycentric MNCs manifest local perspectives, therefore a currency basket that reflects the relative importance of local operations should be the unit of account. And geocentric MNCs manifest global perspective; therefore, a multinational unit of account should be used. Jacobi discusses the practical difficulties of his proposals and concludes that the Special Drawing Rights (SDRs) could be the answer.

This chapter is a review of the empirical research on the economic consequences of foreign currency translation rule change. The studies can be grouped as: descriptive effects, managerial effects, management effects, capital market effects, and predictive ability effects.

Descriptive Effects

Generally, the first step in evaluating an accounting rule or policy change is to examine the direct effects on the financial statements of the firms affected by the change. However, caution should be applied in interpreting the effect (no effect). For example, change (no change) in accounting earnings provides useful information only if it alters perceptions about future dividend-paying ability.

Rodriguez (1977) provides the first comprehensive study of the descriptive effects of FAS8. The author, using annual reports, investigated 70 Fortune 500 MNCs operating in Europe, Japan, and Canada for effects on earnings in 1975. The restated (recalculated in accordance with FAS8) 1975 annual reports were compared to the original reports, and restated earnings were expressed as a percentage of the original earnings and firms were classified according to the percentage change. Rodriguez shows

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that fewer than one third of the firms--a total of 23--reported a material impact due to restatement; but, of those, only 13 had a change of over 5% of net income. Of those 23, 13 had positive translation adjustment, while the other 10 reported decreases.

Rodriguez concludes that FAS8 had little impact on firms' earnings patterns. However, her conclusion should be interpreted with caution. She did not control for the relative size of foreign operations, did not control for the possibility that some MNCs had already been using translation rules very similar to FAS8, and she did not control for the possibility that some MNCs could have taken steps, if they had used FAS8 in 1975, to offset the undesired translation gains or losses (e.g., hedging).

Griffin (1982) conducts a two phase study. Phase I will be reviewed here. Phase II will be covered under management effects. Griffin reports the impact of foreign currency exchange gains and losses on reported earnings. He describes the behavior during 1974-1977 of reported foreign exchange gains and losses for (1) a broad sample of multinational companies, and (2) those multinational companies that submitted comments to the Financial Accounting Standards Board on FAS8, as part of their response to May 1978 invitation by FASB to comment on standards in effect for at least two years.

Griffin observes that the foreign exchange gain or loss component of earnings is not a simple, unambiguous number, measured identically, across all firms. First, it is a mixture of realized and unrealized gains and losses, some of which may be a

consequence of remeasuring foreign currency financial statements and other a result of converting foreign cash, receivables, and payables into dollars. Second, the reported exchange gain or loss is a function of the firms' treatment of taxes and for example flow through, deferral or a combination thereof).

Griffin performs a set of tests to compare foreign exchange gain or loss (deflated by pretax net income) of FAS8 respondents with a sample of multinationals known to be affected by FAS8 but did not respond to the FASB's invitation to comment. These set of tests not only compares FAS8 respondents with other multinationals, but also involves a partitioning of the "other multinationals" sample according to accounting methods in use prior to FAS8. Griffin hypothesizes that the differences, if they exist at all, should be most evident in a comparison of FAS8 respondents with multinationals whose pre- and post-FAS8 accounting methods are essentially similar. Griffin concludes that:

> First, the research confirms earlier assessments that foreign currency accounting rules have a relatively minor impact on the annual and quarterly earnings of the average multinational company. Assuming that the percentages presented here are representative of the largest possible effect that certain proposed changes in Statement 8 (e.g., defer all translation gains and losses until realized) could have on pretax net income, this suggests that the eventual outcome of the FASB's reconsideration of Statement 8 is unlikely to produce dramatic and material changes in firms' reported results.

> Second, while the average impact of Statement 8 is apparently not substantial, there is limited evidence that FASB respondents exhibited greater swings in pretax earnings due to foreign currency accounting rules than did multinationals that did not submit comments on Statement 8 as part of the May 1978 post-enactment

review. The effects were most pronounced when based on the absolute value of year-to-year changes in the exchange gain or loss item as a percentage of pretax net income.

(p. 66)

While Rodriguez (1977) and Griffin (1982) investigated the effect of mandatory translation change on earnings patterns, Gray (1984) reports the effect of earnings patterns on discretionary translation decisions. For 1981 annual reports, MNCs could select either FAS8 or FAS52. After analyzing the annual reports of the 40 largest Fortune 500 industrial MNCs and the 27 largest multinational banks, Gray concludes that the majority selected the accounting standard which increased their reported income--75% of industrials and 67% of banks. Moreover, most of those which adopted or retained the standard that decreased reporting earnings still reported a higher earnings per share (EPS) in 1981 than in 1980.

Managerial Effects

An analysis of the managerial effects of a mandated accounting change is important because:

-The accounting method change may induce changes in decision-making behavior by management, and these changes in turn alter the future cashflows of the firm.

-The accounting change may alter the internal performance evaluation of the firm.

Evans, Folks, and Jilling (1978) conducted a questionnaire study of the foreign exchange risk management

(FERM) practices of American multinationals after FAS8. The 156 responses were then compared with 107 responses obtained from a similar questionnaire study in 1975 to determine the impact of FAS8 on FERM.

Evans, Folks, and Jillign (1978) concluded that:

-FAS8 has increased resources devoted to FERM as well as increased involvement by top management.

-FAS8 has increased centralized control of exchange risk management. Exchange rate has become a factor in long-range planning.

-FAS8 has increased local currency borrowing and forward contracts.

Shank, Dillard, and Murdock (1979) conducted a two phase study on the economic impact of FAS8. Phase I will be reported here. Phase II will be discussed in the following section.

They used field interview and questionnaire methodology to gather information on possible effects of FAS8 on capital investments, financing, and operating decisions of MNCs' managers. They developed a limited non-random sample of 25 large, affected multinational firms, including four major banks. Shank, Dillard and Murdock (1979) report finding considerable impact on management actions resulting from FAS8. Key conclusions include:

-A majority of the firms investigated had changed the proportions of local currency debt and home currency debt to reduce exposure to translation adjustments under FAS8.

-A majority of the firms had entered forward markets to cover translation exposure under FAS8.

-A vast majority of the firms believed that financial cost of implementing FAS8 had been significant in terms of increased reporting and analysis costs.

Morsicato (1980) and Person & Lessig (1979) examined the change in performance evaluation techniques as a result of FAS8 as a sub-part of the larger questionnaire study of internal performance evaluation of foreign operations.

Morsicato found that 44% of her sample changed the method used for internal reporting to the temporal method required for external reporting to the temporal method required for external reporting by FAS8. The reasons given for the change were: convenience, confusion avoidance, consistency and practicality.

Person & Lessig report the impact of FAS8 on performance evaluation procedures as:

-65% of the sample agreed that FAS8 had had little impact on how they evaluated/planned to evaluate overseas operations.

-57% of the sample agreed that they were led to emphasize local currency results as well as the U.S. dollar results owing to the distorting impact of FAS8 on their translated gross profit margins.

-47% of the sample agreed that FAS8 resulted in foreign operations' managers being held more accountable for transaction (conversion) adjustments; corresponding percentage for translation adjustment was 32%.

Management Effects

An accounting method change may affect management's wealth. Many executive compensation packages explicitly include bonus plans or stock option plans in which financial statement based variables are a key component. For example, some plans define the bonus pool to be a percentage of reported earnings. Other plans may base the award of stock option units on the return on equity of the firm vis-a-vis the average return on equity of a "Key Competitor" group of firms. In this context, management has an incentive to lobby for accounting methods that are perceived to increase the present value of their compensation package. Even if there is no explicit link between financial statement variables and an executive compensation package plan, an implicit link could result in management, considering this factor, in accounting method choice.

In Phase II of his study, Griffin (1982) compares FAS8 respondents and non-respondents on the basis of their general firm characteristics (e.g. non-earnings variables). He uses management compensation, leverage, firm size and risk in a multinominal logit analysis to test whether they could discriminate between FAS8 respondents and non-respondents. Griffin concludes that size and leverage were two factors that differentiated FAS8 respondents from non-respondents.

Griffin (1983) extends and improves Griffin (1982). He formulates a model to explain and predict managers' preferences for foreign currency accounting choices.

> This paper embraces the ..... view - that corporate managers act in a self-interested manner preferring accounting proposals that enhance rather than diminish the utility of their wealth. Wealth increases, according to Watts and Zimmerman (1978) among others, are captured as either direct cash payments tied to accounting rules or indirect cash payments secured as returns on securities held, which themselves are conditioned by accounting rules. Managers' wealth, for example, may be affected by an accounting proposal that potentially affects incentive compensation payments, modifies tax calculations (income, sales, excise, etc.), provides costly information for investors, creditors, competitors, and other users of financial statements, alters investment and financing opportunities (e.g., restrictions in debt covenants), or changes the perceptions of interested outside parties such as regulators, elected officials, labor, and public interest groups.
>
> (Griffin, 1983, p. 131)

Griffin uses management compensation, firm size, performance, leverage, and management's response to FAS8 as independent variables, in a discriminant analysis to predict respondents/non-respondents to FASB's invitation to comment on FASB's proposal that resulted in FAS52.

Griffin concludes that relative to other multinationals, FAS52 respondents were larger, less profitable and had been FAS8 respondents.

Capital Market Effects

Perhaps the most popular area of accounting research in recent years has been the examination of security price/return response to mandatory accounting policies. (For a recent review of this literature see Foster, 1980; and Holthausen and Leftwitch, 1983).

The focal point in market reaction studies is the equation of stock market impact (no impact) with immediate stock price response (non-response). More specifically, if change in translation methodology (e.g., FAS8) provides useful information, based on the assumption of market efficiency, one should observe immediate revision of expectations and, hence, stock price response.

Dukes (1978) investigated the effect of FAS8 on stock market returns. He examined monthly return data over three separate time periods:

1.   1968-1969: a period of relatively stable exchange rates and "old" foreign currency translation.

2.   1970-1974: a period of volatile exchange rates and "old" foreign currency translation.

3.   1975-1976: a period of volatile exchange rates and "new" foreign currency translation.

Periods 1 and 2 were investigated for validation purposes.

A total of 479 firms were identified as meeting the following criteria:

1.   Listing on New York Stock Exchange.

2.   Availability of security return data for the period 1965-1976.

3.   Assignability to one of the six groups shown in Table 1.

TABLE 1

ASSIGNMENT OF FIRMS TO GROUPS (DUKES, 1978)

		PRE-FAS8 TRANSLATION METHOD		
		Current/ Non- Current	Monetary/ Non- Monetary	Hybrid Current
PRE-FAS8 GAIN OR	Immediate Recognition	Group 1	Group 3	Group 5
LOSS TREATMENT	Deferral	Group 2	Group 4	Group 6

A control sample of domestic firms was also selected.

Dukes uses the single-factor capital asset pricing model to analyze the effect of FAS8 on risk/return characteristics of affected firms.

The single-factor asset pricing model he uses asserts expected earnings to be:

$$E(R_{it}) = R_f + B_i [E(R_{mt}) - R_f]$$

where:

$E(.)$ = Expectations operator

= Indication of random variable

R_{it} = $\dfrac{Price_t - Price_{t-1} + Dividends_t}{Price_{t-1}}$

R_f = Riskless rate of return

B_i = Measure of relative risk for security i

R_{mt} = the return on the market portfolio in period t

Dukes hypothesizes that any adverse effect, if any, of FAS8 will affect B_i, and will be revealed by the return of affected firms being less than the return of comparable, unaffected firms. Using the 60-month period prior to each test period to estimate B_i, he compares the average monthly risk-adjusted returns of the various portfolios in each of the three test periods. If the returns were comparable in the first two periods, he argues, he would feel justified in comparing the returns after FAS8 was implemented in the third period.

After forming the portfolios and weighting them so that the portfolio B_i is one, Dukes uses actual market data to compute monthly returns. Dukes uses Hoteling T^2 statistic to test his hypothesis. He concludes that there was no significant difference between the returns earned by any of the portfolios in any of the periods, including the post-FAS8 period.

As an extension to his initial study, Dukes compares the security return behavior of MNCs with the market portfolio. This analysis also does not yield a significant difference.

In the third analysis, firms following methods similar to FAS8 are compared with firms using other methods prior to FAS8. The security return behavior of these two groups was not statistically different.

Dukes performs two forms of tests at the individual security level. He performs a test to determine whether a statistically significant number of MNCs experienced a change in the association between the common stock returns after the

issuance of FAS8 and the market portfolio over the same period. The number of changes is not statistically significant. In the second test, he compares the variability of security returns, adjusted for market-wide movements, before and for one year after implementation of FAS8. No increase in variability is observed for this time period.

Shank, Dillard, and Murdock (1979) investigate the potential securities market effect of FAS8 using a somewhat different sample and a different methodology than Dukes. They employ the research design shown in Table 2 to classify firms into one of the four groups shown.

The firms in their sample consisted of all firms meeting the following criteria:

1. Availability of stock return data for the period 1970-1977.

2. Separate disclosure of foreign operations in 1976 annual report.

3. Identifiability of pre-FAS8 translation method.

Firms in groups I, II and III are matched with a firm in the control group IV, where matching was on the basis of a) industry, b) approximate size, and c) general risk class. Good matches were not always possible on all the matching variables, thus Shank, Dillard, and Murdock ran two sets of tests, one with excellent matches and a second set of tests with excellent and good matches combined.

Shank, Dillard, and Murdock proceed to test for differences in stock market response, measured several alternative ways, between the three affected (experimental) groups (I, II and III) aggregated into portfolios, and unaffected, matched portfolios composed of firms from group IV. The first test examines for changes in systematic risk or beta around the issuance of FAS8. Betas are computed, using the single index market model, for all firms over two 24-month periods. The first period includes calendar years 1974 and 1975 and is considered a pre-FAS8 period. The second period includes calendar years 1976 and 1977 and is considered to be a post-FAS8 period. They argue that if the mandated change in reporting multinational operations increased the markets' assessment of systematic risk, the portfolio beta for the affected firms should increase while the unaffected (control) groups would not change. Shank, Dillard, and Murdock conclude that the perceived riskiness of all the portfolios rose, relative to the riskiness of the market as a whole, in the period examined after the issuance of FAS8. While five out of the six experimental portfolios rose more than their matched control portfolios, it was not statistically significant at the 5 percent level. These results do not support the hypothesis that FAS8 resulted in significant increases in perceived riskiness of affected firms.

TABLE 2

ASSIGNMENT OF FIRMS TO GROUPS (SHANK ET AL, 1979)

		FAS8 REQUIRED CHANGE OF TRANSLATION METHOD	
		YES	NO
FAS8 REQUIRED CHANGE OF GAIN OR LOSS TREATMENT	YES	Experimental (I) 118 Firms	Experimental (III) 64 firms
	NO	Experimental (II) 221 Firms	Control (IV) 108 firms

Shank, Dillard, and Murdock also perform tests on the change in variance in the estimates of betas pre- and post-FAS8. They argue that the change of accounting methods might induce a higher level of disagreement about the beta level and thus increase the dispersion in the distribution of estimates of systematic risk. They conclude that consensus in the stock market about the level of riskiness declined for all portfolios; there was as much decline for the control portfolios as for the experimental portfolios. These results do not support the hypothesis that FAS8 reduced the level of consensus about the riskiness of the affected firms.

Tests are also conducted by Shank, Dillard and Murdock regarding differences in risk adjusted rates of return. The test methodology here is very similar to Dukes (1978). Portfolios for both experimental and control firms are constructed such that all portfolios have a beta equal to one. Given that expected returns are equal, differences between experimental and control portfolio actual returns are expected to be zero. They show that average monthly risk-adjusted rates of return earned by experimental firms were not lower than those earned by matched control firms. These results indicate that lower risk-adjusted rates of return were not earned by affected firms.

In a fourth area of investigation, Shank, Dillard, and Murdock examine for possible impact of the issuance of FAS8 on price-earnings ratio (P/E). P/E's are calculated for each firm at four points in time: a) November 30, 1975, after the public release of the statement but before its implementation; b) March 1, 1976, during its initial stage of implementation; c) March, 1977, and d) February 1, 1978. They do not perform any statistical tests on these data because of the intrinsic softness of P/E values. They observe that P/Es declined notably from November 1975 to February 1978 for all portfolios examined, but not more so for the experimental firms. These results do not support the hypothesis that P/Es declined more for affected firms.

Predictive Ability Effects

The predictive ability argument centers on the proposition that alternative accounting methods could be evaluated in terms of their ability to predict future events. For example, the preferred accounting method provides more accurate forecasts of future cashflows.

Brown (1983) investigates the effects of five accounting principle changes on the accuracy of the financial analysts' earnings forecasts. The five accounting changes are foreign currency translation (FAS8), interest capitalization (FAS34), LIFO adopted or extended, and actuarial changes--pensions. In this review, however, only the effects of FAS8 are reported.

Brown initially selected a sample of 600 firms which satisfied the following criteria:

1. Were included in Accounting Trends and Techniques

2. Were included in Value Investment Survey

3. Were registered with the SEC

4. Were listed on New York Stock Exchange or American Stock Exchange

Brown further imposed the following restrictions on the sample:

1. Each firm experienced only one type of accounting change in a given year during the 1974-1979 time period to eliminate the effects of possible concurrent changes.

2. Each firm could be matched against a suitable control firm which did not report any accounting change during the year of change by the experimental firm. Regarding the effects of FAS8, the control group consisted of comparable domestic firms.

The above restrictions reduced the size of the sample for the study of the effects of FAS8 to 31.

Brown hypothesizes that FAS8 will impair earnings forecast accuracy by financial analysts. He proceeds by comparing the forecast accuracy of the year before change to the forecast accuracy of the year after change. He employs nonparametric Wilcoxon Signed Ranks test and concludes that even though the results were in the expected direction, FAS8 did not exert a significant effect on impaired predictive ability. (Brown, p. 439)

CHAPTER IV

METHODOLOGY

Research Design

The basic strategy in this research is to identify a class of financial statement users and compare their earnings predictions before and after the change in the foreign currency translation rule. The user group is financial analysts. Financial analysts' forecasts were chosen over mechanical (time-series) forecasts because:

1. Financial analysts' predictions are a matter of public record (Baldwin 1984).

2. Financial analysts are themselves potential users of financial information (Brown, 1983; McKinnon, 1984).

3. Financial analysts' forecasts contain information (Elton, Gruber, and Gultekin, 1981).

4. Financial analysts' forecasts are more accurate than forecasts of time-series models (Brown and Rozeff, 1978; Collins and Hopwood, 1980).

5. Financial analysts' forecast provide more useful information--rationality, or the ability to reflect all available information--than predictions made by naive models that merely extrapolate past earnings trends (Fried and Givoly, 1982; Givoly and Lakonishok, 1984).

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This study covers six years of forecast data. 1978-1980 is FAS8 period, 1983-1985 is FAS52 period. 1981-1982 is not included because 1981-1982 was a transition period and MNCs could have chosen between FAS8 or FAS52.

Operational Definitions

A multinational company (MNC) is defined as a company that had on the average (during 1978-85 period) at least 10% of its assets located outside of the United States or derived on the average at least 10% of its sales revenues from foreign markets excluding exports.

A domestic company (DC) is defined as a company that had on the average (during 1978-84 period) 5% or less of its assets located outside the United States or derived on the average less than 5% of its sales revenues from foreign markets excluding exports.

Forecast accuracy is defined by the absolute percentage forecast error, or

$$APE_{it} = \left| \frac{F_{it} - A_{it}}{A_{it}} \right|$$

where:

APE_{it} = absolute percentage forecast error for company i during period t

F_{it} = forecasted earnings for company i during period t, and

A_{it} = actual earnings for company i during period t

This error metric has been widely used in accounting research. (See, for example, Hopwood, Newbold, and Silhan, 1982; Collins, Hopwood and McKeown, 1984; Baldwin, 1984; Brown, 1983).

Factors Affecting Forecast Accuracy

The selection of appropriate research design is influenced by the factors that can offer alternative explanations. Previous research on forecast accuracy suggests that some factors should be controlled to eliminate those explanations. Baldwin (1984) suggests the following:

$$F = f(V,A,S,D,I,T,Y,Z,..)$$

where:

F   =   forecast accuracy

V   =   earnings variability

A   =   corporate age

S   =   corporate size

D   =   detail of information

I   =   corporation industry

T   =   lead time to terminal date of forecast

Y   =   calendar year of forecast

Z   =   forecaster

The above factors relate to all companies. However, when one studies MNCs, other factors could be identified which may affect forecast accuracy. For example, scope of foreign

operations, geographic locations of foreign operations, political risk, and foreign inflation rates. Most of the above factors will be controlled by using a repeated measure model.

Specification of the Model

The main objective of this study is to determine the effect of change in translation methodology on the accuracy of financial analysts' earnings forecasts of multinational companies. In order to accomplish this we basically compare error metrics over time.

A very simple design one might employ is the single interrupted time series design of the form:

$$OOOXOOO$$

where:

X is the event (change in translation method)

and

Os are observations (error metrics) on either side of the event X.

Since observations are repeated measures of the same subjects over time, then factors such as corporation age (A), corporate size (S), detail of information (D), corporation industry (I), scope of foreign operations, and geographic locations of foreign operations will not influence the dependent variable (error metric). Lead time to terminal date of forecast (T) can be controlled via sampling by uniform number of days until year-end. The effects of political risk, foreign inflation

and other unexpected events can be minimized by minimizing the lead time (e.g., fourth quarter forecasts). The forecaster (Z) factor is controlled by requiring the same individual (team) prediction over the test period. Earnings variability (V) which is the primary variable of interest (FAS8 vs FAS52) and calendar year of forecast (Y) will be included in the statistical model.

The single interrupted time series design we introduced earlier does not control for the compounding effects of possible extraneous events. More specifically, any observed difference (no difference) in forecast accuracy before and after change in translation standard can be caused by one or a combination of the following potential explanations:

1. Change in translation standard (translation effect)

2. Change in forecasting technology (technology effect); and

3. Unexpected environmental changes in international economy (international effect)

To remove the possible effect of change in technology, a comparable sample of domestic firms (control group) is employed. The matching was on the basis of industry classification (Value Line's industry code) and approximate size (average total assets/total sales during 1978-84 period). A procedure for minimizing the international effect (minimum forecast lead time) has already been suggested.

The employed linear model has the following form:

$$Y_{ijt(k)} = U + A_j + B_k + AB_{jk} + C_{t(k)} + AC_{jt(k)} + E_{ijt(k)}$$

where:

$Y_{ijt(k)}$ = a measurement of forecast accuracy for the ith company of firm type j under translation method k in year t

U = overall mean effect

A_j = firm type effect (MNC vs DC)

B_k = translation method effect (FAS8 vs FAS52)

AB_{jk} = interaction effect of the jth firm type and kth translation method independent of the A, A,B main effects

$C_{t(k)}$ = effect of tth year (nested within levels of translation method)

$AC_{jt(k)}$ = interaction effect of the jth firm type and tth year (nested within translation method independent of the A,C, main effects)

$E_{ijt(k)}$ = error term

In the model, translation method, year, and firm type are fixed (this is an _ex post facto_ study) and only companies (subjects) are assumed random.

Table 3 represents the layout of the repeated measure design.

TABLE 3

LAYOUT OF THE REPEATED MEASURE DESIGN

Translation Method

Firm Type	FAS8			FAS52		
	1978	1979	1980	1983	1984	1985

MNC

Y_{1111} ------------------ Y_{1126}

Y_{n111} ------------------ Y_{n126}

DC

Y_{1211} ------------------ Y_{1226}

Y_{n211} ------------------ Y_{n226}

Statistical Method

The general null hypothesis in this research is that the change in the foreign currency translation rule from FAS8 to FAS52 had no significant effect on the ability of security analysts to make forecasts of earnings per share (translation method main effect). However, before we can test for this main effect, we should test for the existence of interaction between translation method and firm type (we included the control group in this study because we had suspected this interaction). And if in fact the interaction is present then the interpretation of the null hypothesis becomes difficult.

We are also interested in testing for the difference in forecast accuracy between multinationals and domestic firms (firm type main effect) and the difference in forecast accuracy between years (year main effect). Here again we have to test for the existence of interactions, first.

Morrison (1976) describes a variant of the multivariate approach to repeated measures known as profile analysis which we used to test the following formal hypotheses:

(1) Parallelism Hypothesis (Firm Type by Year Interaction Effect). This effect corresponds to the $AC_{jt(k)}$ term in the linear model (page 50).

H_{01}: The profiles for MNCs and DCs are parallel.

$$U_{slope,MNC} = \begin{matrix} U_{MNC,78} - U_{MNC,79} \\ U_{MNC,79} - U_{MNC,80} \\ U_{MNC,80} - U_{MNC,83} \\ U_{MNC,83} - U_{MNC,84} \\ U_{MNC,84} - U_{MNC,85} \end{matrix} = \begin{matrix} U_{DC,78} - U_{DC,79} \\ U_{DC,79} - U_{DC,80} \\ U_{DC,80} - U_{DC,83} \\ U_{DC,83} - U_{DC,84} \\ U_{DC,84} - U_{DC,85} \end{matrix} = U_{slope,DC}$$

where:

$U_{MNC,78}$ = mean absolute percentage forecast error for all multinational companies in 1978, and so forth.

To test the parallelism hypothesis, the differences between adjacent repeated measures are obtained for each company, that is, the difference between forecast accuracy in 1978 and 1979, between 1979 and 1980, and so forth. The obtained difference scores are then substituted as dependent variables in a two sample T^2-analysis.

Harris (1975) reports that T^2-tests are robust with respect to violations of multivariate normality and equality of covariance matrices, so long as sample sizes are equal and fairly large.

(2) Levels Hypothesis (Firm Type Main Effect). This effect corresponds to the A_j term in the linear model (page 50).

> H_{02}: The profiles for MNCs and DCs are at the same level.

$$U_{MNC} = 1/6[U_{MNC,78} + \ldots + U_{MNC,85}]$$
$$= 1/6[U_{DC,78} + \ldots + U_{DC,85}] = U_{DC}$$

where:

> $U_{MNC,78}$ = mean absolute percentage forecast error for all multinational companies in 1978, and so forth.

Assuming H_{01} is tenable, this hypothesis is tested by computing the usual two-sample t-statistic.

(3) Flatness Hypothesis (Year Main Effect). This effect corresponds to the $C_{t(k)}$ term in the linear model (page 50).

> H_{03}: The "pooled" profile for MNCs and DCs combined is perfectly flat (parallel horizontal lines)

$$U_{slope} = \begin{array}{c} U_{78} - U_{79} \\ U_{79} - U_{80} \\ U_{80} - U_{83} \\ U_{83} - U_{84} \\ U_{84} - U_{85} \end{array} = 0$$

where:

U_{78} = mean absolute percentage forecast error for all companies (both MNCs and DCs) in 1978, and so forth.

Assuming the parallelism hypothesis is tenable, this hypothesis is tested by computing the single sample T^2 statistic.

(4) Parallelism Hypothesis (Firm Type by Translation Method Interaction Effect) This effect corresponds to the AB_{jk} term in the linear model (page 50).

H_{04}: The profiles for MNCs and DCs are parallel.

$$U_{slope,MNC} = (U_{MNC,FAS8} - U_{MNC,FAS52})$$
$$= (U_{DC,FAS8} - U_{DC,FAS52}) = U_{slope,DC}$$

where:

$U_{MNC,FAS8}$ = is the mean absolute percentage forecast error for multinational companies under FAS8 (during 1978 - 1980 period), and so forth.

This hypothesis is tested by computing the usual two-sample t-statistic.

(5) Flatness Hypothesis (Translation Method Main Effect). This effect corresponds to the B_k term in the linear model (page 50).

H_{05}: The "pooled" profile for MNCs and DCs combined is perfectly flat (parallel horizontal lines).

$$U_{slope} = U_{FAS8} - U_{FAS52} = 0$$

where:

U_{FAS8} = mean absolute percentage forecast error for all companies (both MNCs and DCs) under FAS8 (1978 - 1980 period), and so forth.

Assuming H_{04} is tenable, this hypothesis is tested by computing the matched-pairs t-statistic.

Sample Selection

The subjects in this study are industrial companies which have satisfied the following requirements:

1. Inclusion in the Value Line Data Base-II.
2. Registration with the SEC.
3. Listing on the New York Stock Exchange.
4. Fiscal year ending on December 31.
5. Inclusion in the Value Line Investment Survey and/or the Earnings Forecaster.

6. Had forecast errors less than 100% in each year.

Requirement one is needed to insure ready access to financial data (especially foreign operations data) on major U.S. industrial companies. The Value Line Data Base-II contains comprehensive annual income statements, balance sheets and sources and uses of funds for over 1600 major companies.

Requirements two and three are imposed to guarantee similar information environments (e.g., uniform financial disclosures).

Requirement four is imposed to insure uniformity of cross-sectional and intratemporal comparisons.

Requirement five is introduced to check the reliability of the forecasts. We selected two samples, one from the Value Line Investment Survey (hereafter VL-sample) and another from the Earnings Forecaster (hereafter EF-sample).

Requirement six is needed to guard against the influence of extreme observations (in this study the mean of the distribution has been used to draw inferences about forecast accuracy). After Baldwin (1984) and Comiskey, Mulford, and Porter (1986), 100% threshold was used.

Our final samples, VL-sample, and EF-sample had 52 companies and 38 companies respectively, and each sample was equally divided between multinational companies and domestic companies.

(See Appendices 1 through 4 for the list of the companies in each sample.)

Data Collection

The repeated measure design we employed requires that:

(1)   the same analyst make predictions for the same company over the test period;

(2)   the forecasts are made on a specified date every year (e.g., June 15) to assure uniform forecast horizon;

(3)   the forecast data for each company is available for every year of the test period (e.g., no empty cells), and

(4)   the forecasts are the last forecasts available for every year (to minimize the forecast horizon).

The Value Line Investment Survey has been published weekly since 1955, and in Part I (Summary of Advice and Index), provides per share estimates by Value Line's analysts for the 12-month period ending during the calendar quarter three to six months ahead for all companies on the Value Line Data Base-II regardless of when the companies' fiscal years end (e.g., all estimates published during the third quarter are for December 31 of the same year). Our VL-sample contains forecasts reported in the last issue of the third quarter of each year. (See Table 4 for exact dates.)

The Earnings Forecaster is a weekly publication by Standard and Poor's, first appeared in 1967. This publication lists forecasts of annual earnings per share (EPS) of the current year and (if available) of the following year for about 1,500 companies (note that the Earnings Forecaster does not report forecasts on all companies on the Data Base-II). The forecasts

are those made by S & P itself and by about seventy other security analysts and brokerage houses. The number of forecasts per company varies considerably (both during a given year and between years) and, in general is a positive function of the prominence of the company and the time of the year. Our EF-sample contains average forecasts (only one forecast on occasions) reported in the last issue of each year. (See Table 4 for exact dates.)

In this study, actual earnings per share (EPS) are primary EPS which exclude extraordinary items and special charges/credits, as contained in the Value Line Data Base II. And forecast data were adjusted, if necessary, for changes in capitalization and stock dividends and stock splits.

TABLE 4

DATES OF FORECASTS

YEAR	VL-SAMPLE	EF-SAMPLE
1978	September 29	December 22
1979	September 28	December 28
1980	September 26	December 26
1983	September 23	December 30
1984	September 21	December 28
1985	September 20	December 27

CHAPTER V

RESULTS

MANOVA procedures of SPSS^X were employed to perform the profile analysis.

Table 5 presents a complete summary of means and standard deviations of forecast errors for both domestic and multinational companies included in VL-sample and EF-sample. Figures 1 through 4 present the plots of observations.

(H_{01}) Firm Type By Year Interaction

Table 6 presents the results of firm type by year interaction tests (multivariate and univariate) for VL-sample. Multivariate parallelism hypothesis cannot be rejected at conventional alpha levels (e.g. alpha=0.01 and alpha=0.05). This implies that forecast errors over time (years) are independent of the type of the company (e.g. factors that cause change in forecast error operate the same way on both domestic companies and multinational companies).

Customarily when the parallelism hypothesis is sustained, we would not proceed with univariate tests. However, we might be interested in analyzing the difference in forecast accuracy between year before change and the year after the change (80-83). The univariate parallelism hypothesis is easily accepted at conventional alpha levels, and from Figure 2, the line segments connecting years 80-83 are indeed parallel.

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TABLE 5

DESCRIPTIVE STATISTICS OF FORECAST ERRORS

VL-SAMPLE

Period	Domestic		Multinational	
	Mean	Std. Dev.	Mean	Std. Dev.
1978	8.789%	12.379%	4.205%	5.375%
1979	10.788	11.732	8.350	13.730
1980	6.154	6.482	5.890	6.579
1983	13.324	13.788	13.327	18.733
1984	12.736	18.898	14.012	18.886
1985	15.915	16.465	10.527	16.352
FAS8	8.577	6.864	6.148	4.994
FAS52	13.992	10.153	12.622	13.038

EF-SAMPLE

Period	Domestic		Multinational	
1978	7.236%	18.213%	4.674%	5.542%
1979	4.246	5.322	3.855	4.484
1980	3.708	3.294	3.739	5.267
1983	7.366	8.005	6.015	8.401
1984	9.093	21.623	4.573	6.334
1985	11.011	22.086	9.642	14.880
FAS8	5.064	7.057	4.089	3.311
FAS52	9.157	9.888	6.743	8.081

FIGURE 1

VL-SAMPLE PROFILES (FAS8-FAS52)
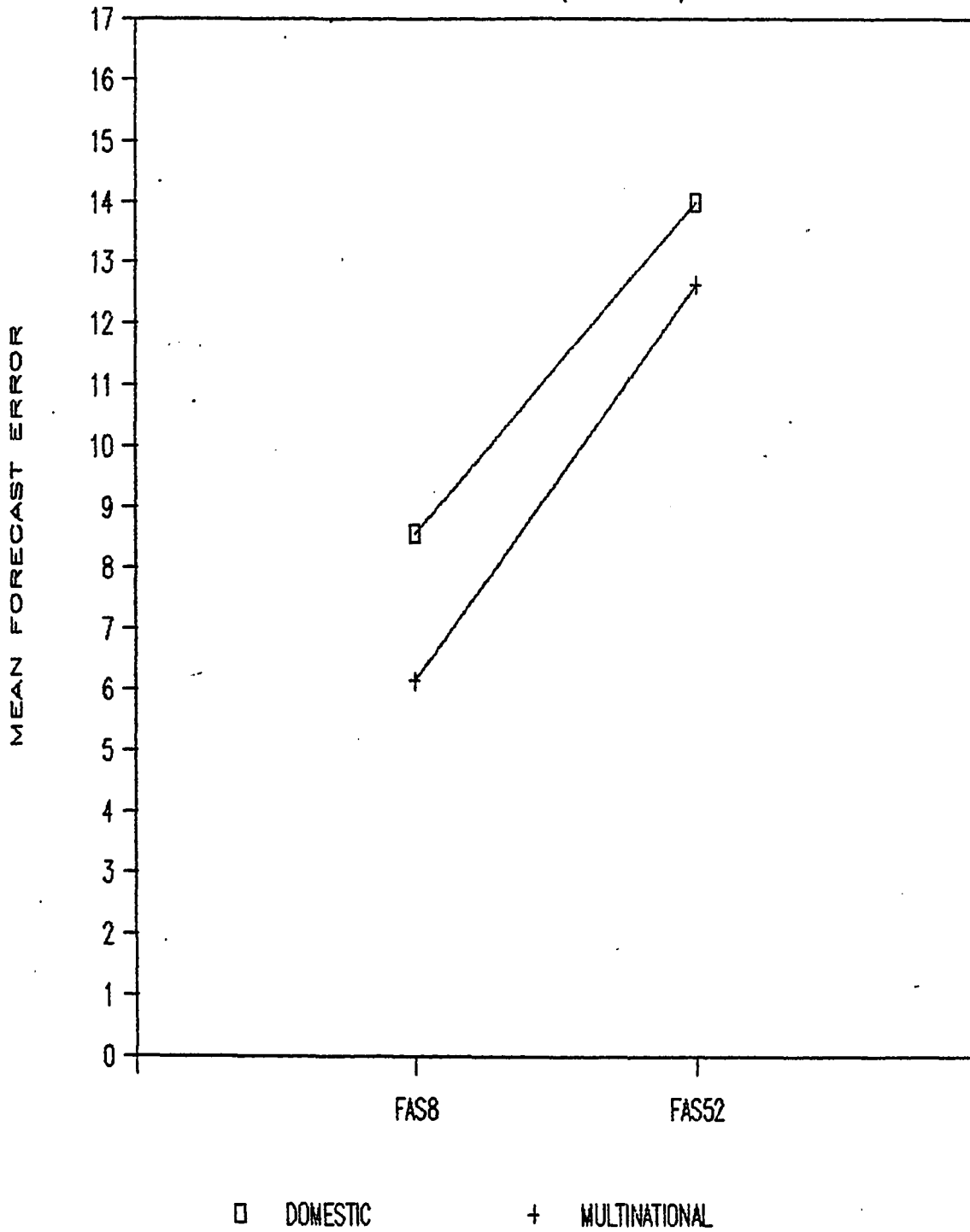
FAS8   FAS52

□ DOMESTIC   + MULTINATIONAL

FIGURE 2

VL-SAMPLE PROFILES (1978-1985)

MEAN FORECAST ERROR plotted against years 1978, 1979, 1980, 1983, 1984, 1985.

□ DOMESTIC   + MULTINATIONAL
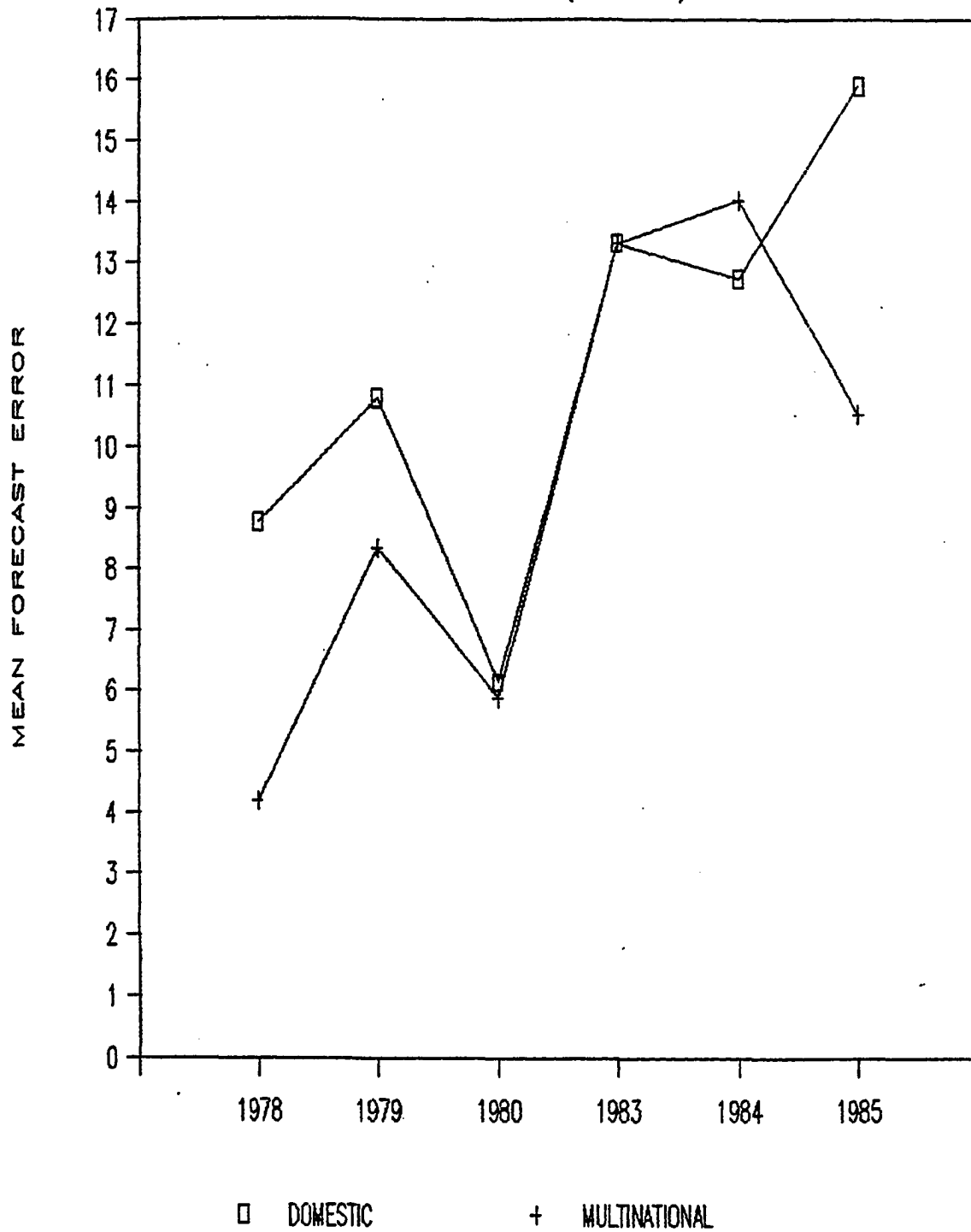
FIGURE 3

EF-SAMPLE PROFILES (FAS8-FAS52)

MEAN FORECAST ERROR

FAS8   FAS52

□   DOMESTIC   +   MULTINATIONAL
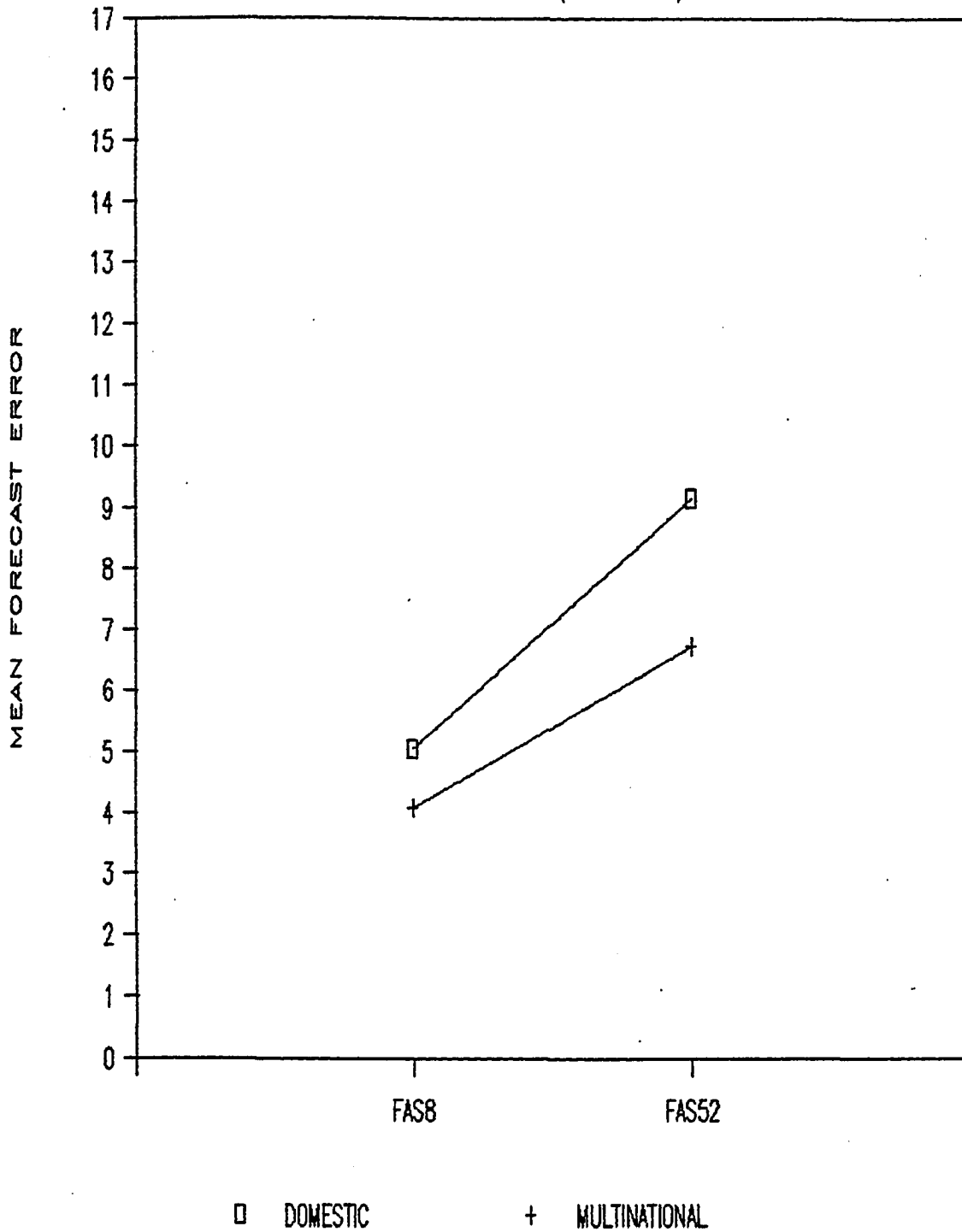
FIGURE 4

EF-SAMPLE PROFILES (1978-1985)

☐ DOMESTIC   + MULTINATIONAL
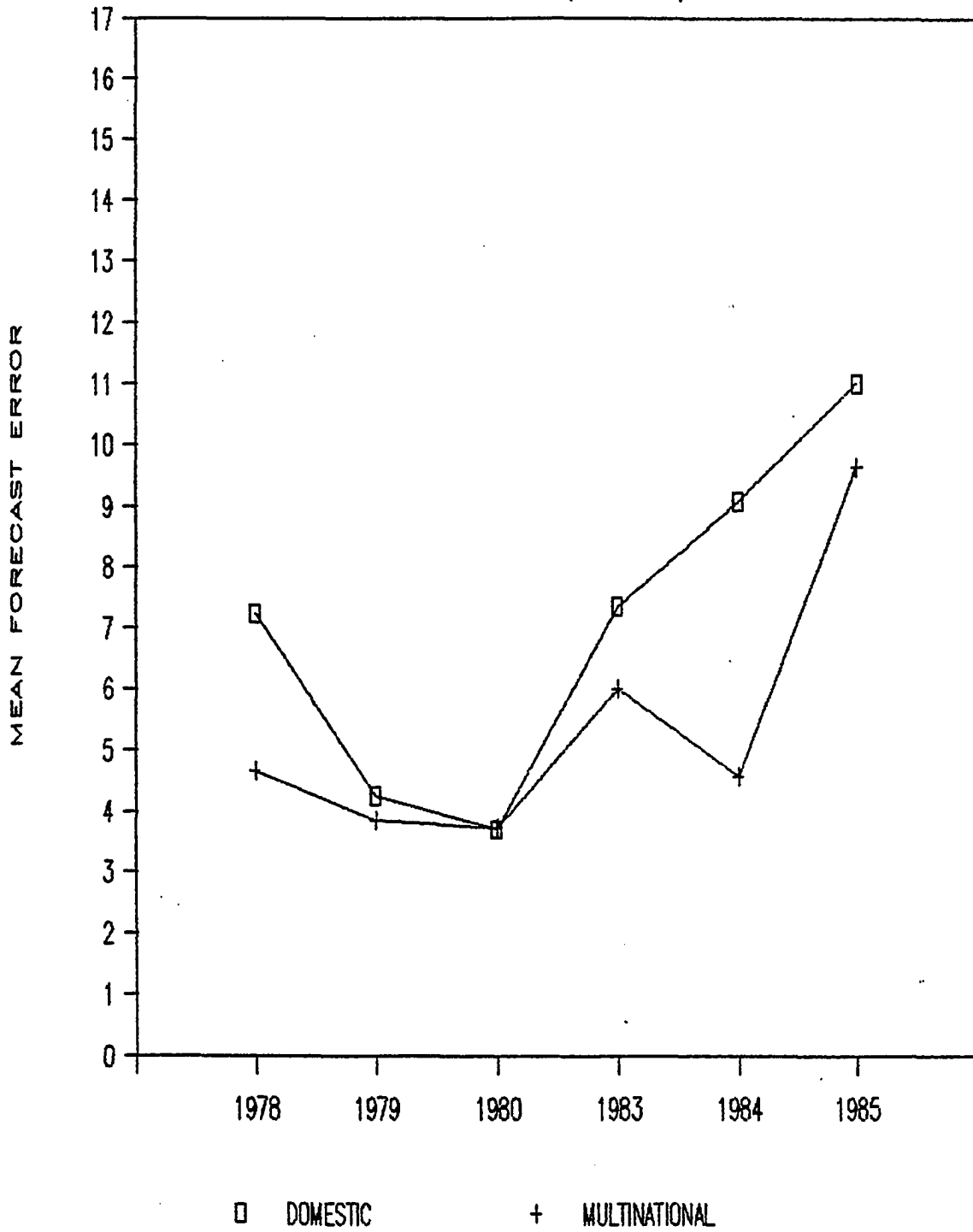
TABLE 6

FIRM TYPE BY YEAR INTERACTION RESULTS (VL-SAMPLE)

TEST NAME	TEST STATISTIC	STATISTIC VALUE	SIGNIFICANCE
Hotellings T^2	F(5,46)	0.75037	0.590
Univariate F-tests			
78-79	F(1,50)	0.27869	0.600
79-80	F(1,50)	0.26097	0.612
80-83	F(1,50)	0.00279	0.958
83-84	F(1,50)	0.04725	0.829
84-85	F(1,50)	1.12444	0.294

TABLE 7

FIRM TYPE BY YEAR INTERACTION RESULTS (EF-SAMPLE)

TEST NAME	TEST STATISTIC	STATISTIC VALUE	SIGNIFICANCE
Hotellings T^2	F(5,32)	0.19547	0.962
Univariate F-tests			
78-79	F(1,36)	0.26202	0.612
79-80	F(1,36)	0.03406	0.853
80-83	F(1,36)	0.21429	0.646
83-84	F(1,36)	0.30815	0.582
84-85	F(1,36)	0.15588	0.695

Table 7 reports the results of multivariate and univariate parallelism tests for EF-sample. Here again both multivariate and univariate (80-83) parallelism hypotheses are accepted at conventional alpha levels. Visual inspection of Figure 4 reveals that the line segments connecting years 80-83 are parallel. These observations imply that change in forecast error, if any, between years 80-83 is not due to translation method change.

(H02) Firm Type Main Effect

Table 8 presents the results of t-tests on both VL-sample and EF-sample. The null hypothesis of equal forecast errors between multinational and domestic companies cannot be rejected at conventional alpha levels.

However, Table 5, and Figures 1 through 4, seem to suggest that analysts are generally more accurate, though not statistically supported, in forecasting earnings of multinational companies than domestic companies. This observation, however, was expected. The Statement of Financial Accounting Standards No. 14, "Financial Reporting for Segments of a Business Enterprise" (FAS14), requires separate reporting of foreign operations if either of foreign sales or foreign assets is at least 10% of consolidated total. And this is basically the same definition we used when we selected our samples. Thus being selected as a multinational company automatically implies more information disclosures compared to domestic companies (which might be a

TABLE 8

FIRM TYPE MAIN EFFECT RESULTS

Sample Name	Test Name	Test Statistic	Statistic Value	Significance
VL-Sample	t-test	t(50)	0.91840	0.363
EF-Sample	t-test	t(36)	0.92617	0.361

single segment entity providing aggregate information). Research by Kinney (1971), Collins (1976), and Baldwin (1984) suggest that disaggregated financial data is more useful for earnings forecasting than aggregate data. Another explanation for observing more accurate forecasts of multinationals than domestic companies is the potential for risk-reduction via corporate international diversification. To the extent that international capital markets (especially stock markets) are segmented, multinational companies may provide an international diversification service to their shareholders. Empirical research indicates recognition of the diversification benefits/risk-reduction of MNCs by the market (see for example Hughes, Logue and Sweeney, 1975; and Agmon and Lessard, 1977).

(H$_{03}$) Year Main Effect

Table 9 presents the multivariate and univariate test results on year main effect for VL-sample. This is basically the test of equal forecast errors over time (e.g. forecast error in

TABLE 9

YEAR MAIN EFFECT RESULTS (VL-SAMPLE)

TEST NAME	TEST STATISTIC	STATISTIC VALUE	SIGNIFICANCE
Hotellings T^2	$F(5,46)$	3.49894	0.009
Univariate F-tests			
78-79	$F(1,50)$	2.28694	0.132
79-80	$F(1,50)$	2.77853	0.102
80-83	$F(1,50)$	8.26727	0.006
83-84	$F(1,50)$	0.00027	0.987
84-85	$F(1,50)$	0.00238	0.961

TABLE 10

YEAR MAIN EFFECT RESULTS (EF-SAMPLE)

TEST NAME	TEST STATISTIC	STATISTIC VALUE	SIGNIFICANCE
Hotellings T^2	$F(5,32)$	1.66451	0.172
Univariate F-tests			
78-79	$F(1,36)$	0.80592	0.375
79-80	$F(1,36)$	0.08447	0.773
80-83	$F(1,36)$	3.95484	0.054
83-84	$F(1,36)$	0.00250	0.960
84-85	$F(1,36)$	0.76671	0.387

year one is equal to the forecast error in year two, and so on).
The multivariate null hypothesis is rejected at alpha=0.01,
Further, from univariate test results, we would reject the
equality of forecast errors for years 80-83 at alpha=0.01.

EF-sample provides us with different results. From Table
10, neither multivariate test nor any univariate tests could be
rejected at alpha=0.05 (univariate for years 80-83 could be
rejected at alpha=0.1). This apparent discrepancy could be due to
the fact that there is a three month time difference between VL-
sample dates and EF-sample dates (see Table 4). Furthermore,
visual inspection of Figures 1 through 4 suggests that forecast
errors in EF-sample are on the average lower than
forecast errors in VL-sample. Thus, we might offer the following
tentative conclusion that forecasts become more accurate and more
consistent as the year progresses. Research by Elton, Gruber, and
Gultekin (1984) supports this conclusion.

(H$_{04}$) Firm Type By Translation Method Interaction

Firm type by translation method interaction test is
basically the compact version of the firm type by year
interaction test. As is expected, the parallelism hypothesis
cannot be rejected as shown in Table 11.

If we superimpose Figure 1 over Figure 3, we observe that
the domestic profiles of the two samples are more parallel than
the multinational profiles. In other words,
increase in forecast error from FAS8 to FAS52 was much higher for

TABLE 11

FIRM TYPE BY TRANSLATION METHOD TEST RESULTS

Sample Name	Test Name	Test Statistic	Statistic Value	Significance
VL-Sample	t-test	t(50)	0.34471	0.732
EF-Sample	t-test	t(36)	-0.45103	0.655

VL-sample multinationals than EF-sample multinationals while increase in forecast error from FAS8 to FAS52 was uniform for domestic companies in two samples.

This observation implies that forecast horizon (lead time to terminal date) is a more influential factor in forecasting earnings of multinationals as compared to domestic companies.

(H_{05}) Translation Method Main Effect

This is the main null hypothesis. The alternative hypothesis, advanced by FAS52 supporters, is that FAS52 increases forecast accuracy (or alternatively FAS52 reduces forecast error).

Table 12 reports results of (two-tailed) paired t-tests for two samples. For VL-sample, we reject the null hypothesis at alpha=0.01, and accept the alternative hypothesis that forecast error has increased during FAS52 period. For EF-sample, we reject the null hypothesis at alpha=0.05 and accept the alternative hypothesis that forecast error has increased during FAS52 period.

TABLE 12

TRANSLATION METHOD MAIN EFFECT RESULTS

Sample Name	Test Name	Test Statistic	Statistic Value	Significance
VL-Sample	Paired t-test	t(51)	-3.90	0.000
EF-Sample	Paired t-test	t(37)	-2.14	0.039

However, the observed increase in forecast error is not due to change in foreign currency translation. Careful examination of Figures 1 and 3 reveals that the profiles of multinational and domestic companies are parallel (no interaction). This means that the change in forecast error of multinationals parallels the change in forecast error of domestic companies and since the domestic companies (control group) are not subjected to a foreign currency translation rule (treatment), then the change in forecast error of multinationals is not caused by foreign currency translation rule change.

SUMMARY AND CONCLUSIONS

Evidence from the efficient market hypothesis literature indicates that the stock prices adjust very quickly to the incoming news about a change in expectations about future earnings by market participants Lorie, Dodd, and Kimpton, 1985). The expectations about future earnings are in part formed by the financial reports provided by the corporations. More detailed financial reports facilitate more accurate forecasts of earnings and hence more rational pricing of securities in capital markets.

Investors prefer accounting information that enhance their ability to forecast future earnings. Managers on the other hand prefer accounting information that maximize their compensation. This conflict of interest by the securities markets agents is resolved through private sector standard setting (FASB). In the Statement of Financial Accounting Concepts No. 1, "Objectives of Financial Reporting by Business Enterprises" FASB formalizes the policy that users' interests are first, which implies that changes in financial reporting standards should improve investors' welfare.

In December 1981, FASB issued FAS52 "Foreign Currency Translation," which replaced FAS8. "Accounting for the translation of Foreign Currency Transactions and Foreign Currency

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Financial Statements" and was to smooth earnings and enhance predictability.

The main purpose of this study is to compare earnings predictability of FAS52 with the earnings predictability of FAS8, to determine the direction of the welfare impact on the investors. Since aggregate investor expectations are not directly observable, we utilized the readily available analysts' forecasts instead. Our model predicts that any improvement in earnings predictability, due to FAS52, should result in significant improvement in accuracy of analysts' forecasts.

The results of the profile analysis are summarized below:

1 - Change in forecast accuracy is independent of the type of the company (for example, factors that cause change in forecast error operate the same way on both domestic companies and multinational companies.

2 - Analysts seem to be more accurate, though not statistically supported, in forecasting earnings of multinational companies than domestic companies. This could be due to more information disclosure by MNCs and/or diversification benefits of MNCs.

3 - Forecasts become more accurate and more consistent as the year progresses.

4 - Forecast horizon is a more influential factor in forecasting earnings of multinationals as compared to domestic companies.

5 - Forecast error was significantly higher under FAS52 compared to FAS8 - an effect opposite to what was expected. However, the change in forecast error of MNCs paralleled that of DCs, which implies that worsening of forecast error was not due to the change in foreign currency translation rule.

The observation (result 5) above that forecast accurcy during the period 1983-85 has significantly diminished compared to the 1978-80 period is alarming to the investors in general and the SEC in particular.

FASB's due process that allows all interested parties to participate and make their views known to the Board, can create the very significant risk that a single group might obtain the upper hand in the Board's deliberations and infringe on the legitimate interests of the other groups. Miller and Redding (1986) provide the following evidence that FASB has fallen under the dominance of preparers.

1 - Preparers have established a very high profile in FASB's activities. With respect to comment letters received in response to discussion documents and Exposure Drafts, more usually come from preparers than any other groups.

2 - Approximately 50 percent of the Financial Accounting Foundation's donated funds come from "industry."

3 - Corporate accountants constitute one forth of the Trustees of the Financial Accounting Foundation, over one third of the Financial Accounting Standards Advisory Council, and one fourth of the Emerging Issues Task Force.

4 - Probably the most important evidence of preparer dominance (and consistently low levels of user participation) can be seen in the reduced level of the SEC's activism. The 1934 Securities Act has granted the SEC power to oversee the activities of the FASB. However, unlike 1970s, 1980s has witnessed a sharp decline in the activities of the SEC primarily due to the pro business (less regulation) policies of the Reagan Administration (for example, appointment of less active new Chairman and Chief Accountant of the SEC).

Companies (both MNCs and DCs) employ a portfolio of accounting procedures (for example, LIFO vs FIFO inventory costing, straight line vs accelerated depreciation, etc.). Therefore, numerous combinations of procedures available give a manager a range of reported earnings. A rational manager would select a portfolio of accounting procedures that will maximize his expected utility. Given the pro business environment of 1980s and the alleged preparer dominance in accounting standard setting, it is no surprise that we have observed deterioration of earnings forecasting in 1980s vs 1970s. One logical conclusion is that most if not all, accounting standards promulgated since 1980 are preparer biased, therefore investigations of the effect of change in a single standard might not be powerful - for example, we observe worsening of the earnings forecast accuracy but we cannot attribute that to a change in a single accounting standard.

The main conclusion of this study is that the FASB has failed to fulfill its constitutional obligation to promulgate standards that protect the interests of the investors, first.

The findings of this research should be interpreted with caution. The rather small size of the samples caused by the imposition of the requirements of the repeated measure design, limits the generalizability of the research results. For example, largest multinational companies are excluded because suitable comparable domestic companies do not exist.

This research provides an indirect evidence on the impact of the change in foreign currency translation standard on the welfare of the investors. A logical extension of this research is to analyze the stock price reactions/no reactions to the change in foreign currency translation rule – an event study.

ENDNOTES

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2. "Growth of U.S. Multinational Companies, 1966-77," Survey of Current Business, April 1982.

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APPENDIX 1

LIST OF THE DOMESTIC COMPANIES IN VL-SAMPLE

Value Line Industry Code	Industry	Company
1000	Metals & Mining	Asarco Inc.
1540	Building/Home-Furnishings	National Gypsum
1540	"	Vulcan Materials
2000	Food Products-General	Hershey Foods
2082	Brewing	Anheuser-Busch
2600	Forest Products/Paper	Georgia-Pacific
2600	"	Mead Corp.
2640	Containers	Dorsey Corp.
2700	Publishing	Donnelley (R.R.) & Son
2820	"	G't Lakes Chemical
2900	Petroleum	Pennzoil Co.
2900	"	Standard Oil Co.
3000	Tire/Rubber	Carlisle Corp.
3240	Cement	Moore McCormack Res.
3312	Steel-Integrated	LTV Corp.
3500	Machinery	Gatx Corp.
3533	Equipment	Global Marine
3570	Office Equipment/Supplies	Diebold, Inc.
3600	Electrical Equipment	Grainger (W.W.)
3630	Home Appliances	Maytag Co.
3714	Autoparts-Replacement	Genuine Parts Co.
3720	Aerospace-Diversified	Martin Marietta Corp.
3720	"	McDonnell Douglas
3720	"	Northrop Corp.
9913	Conglomerate	Chromalloy American
9913	"	Teledyne, Inc.

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APPENDIX 2

LIST OF THE MULTINATIONAL COMPANIES IN VL-SAMPLE

Value Line Industry Code	Industry	Company
1000	Metals & Mining	Newmont Mining
1540	Building/Home-Furnishings	Masco Corp.
1540	"	American Standard
2000	Food Products-General	Kellogg
2082	Brewing	Coca-Cola
2600	Forest Products/Paper	Champion Int'l Corp.
2600	"	Crown Zellerbach
2640	Packing & Container	Crown Cork
2700	Publishing	Dun & Bradstreet
2820	"	Int'l Flavors & Fragrance
2900	Petroleum	Phillips Petroleum
2900	"	Murphy Oil Corp.
3000	Tire/Rubber	Bandag, Inc.
3240	Cement	Lone Star Ind.
3312	Steel-Integrated	Armco Inc.
3500	Machinery	Libby-Owens-Ford
3533	Petroleum Services/Equipment	Western Co. of No. America
3570	Office Equipment/Supplies	Nashua Corp.
3600	Electrical Equipment	Square D
3630	Home Appliances	Robertshaw Controls
3714	Autoparts-Replacement	Champion Spark Plug
3720	Aerospace-Diversified	Raytheon Co.
3720	"	TRW Inc.
3720	"	Sundstrand Corp.
9913	Conglomerate	Borg-Warner
9913	"	Emhart Corp.

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APPENDIX 3

LIST OF THE DOMESTIC COMPANIES IN EF-SAMPLE

Value Line Industry Code	Industry	Company
1000	Metals & Mining	Asarco Inc.
1540	Building/Home-Furnishings	National Gypsum
1540	"	Vulcan Materials
2000	Food Products-General	Hershey Foods
2082	Brewing	Anheuser-Busch
2600	Forest Products/Paper	Georgia-Pacific
2600	"	Mead Corp.
2700	Publishing	Deluxe Check Print
2820	Chemicals-Specialty	Great Lakes Chemical
2900	Petroleum	Pennzoil Company
2900	"	Standard Oil Co.
3500	Machinery	Gatx Corp.
3600	Electrical Equipment	Grainger (W.W.)
3630	Home Appliances	Maytag Co.
3714	Autoparts-Replacement	Genuine Parts Co.
3720	Aerospace-Diversified	McDonnell Douglas
3720	"	Northrop Corp.
3720	"	Martin Marietta Corp.
9913	Conglomerate	Teledyne Inc.

APPENDIX 4

LIST OF THE MULTINATIONAL COMPANIES IN EF-SAMPLE

Value Line Industry Code	Industry	Company
1000	Metals & Mining	Newmont Mining
1540	Building/Home-Furnishings	Masco Corp.
1540	"	American Standard
2000	Food Products-General	Wrigley (WM.) Jr.
2082	Brewing	Coca-Cola
2600	Forest Products/Paper	Champion Int'l Corp.
2600	"	Crown Zellerbach
2700	Publishing	Dun & Bradstreet
2820	Chemicals-Specialty	Int'l Flavors & Fragrance
2900	Petroleum	Phillips Petroleum
2900	"	Murphy Oil Corp.
3500	Machinery	Libby-Owens-Ford
3600	Electrical Equipment	Square D
3630	Home Appliances	Robertshaw Controls
3714	Autoparts-Replacement	Champion Spark Plug
3720	Aerospace-Diversified	Raytheon Co.
3720	"	Sundstrand Corp.
3720	"	TRW Inc.
9913	Conglomerate	Borg-Warner

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