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An examination of the market reaction to the adoption of SFAS No.52: A New-Information-de-Facto approach

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AN EXAMINATION OF
THE MARKET REACTION TO THE ADOPTION OF SFAS NO.52:
A NEW-INFORMATION-DE-FACTO APPROACH

by

Tsing Tzai WU

A dissertation submitted to the Graduate Faculty in Business in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York.

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ABSTRACT

AN EXAMINATION OF THE MARKET REACTION TO THE ADOPTION OF SFAS NO.52: A NEW-INFORMATION-DE-FACTO APPROACH

by

Tsing Tzai Wu

Advisor: Professor Steven B. Lilien

This study develops a new methodology, the New-Information-de-Facto Approach to examine the market reaction to the differential income from the accounting change of foreign currency translation. The main enhancement of this approach lies in the advocated analyses on the timely quarter when an accounting change occurs. Previous studies using the lump-sum annual impact apparently mis-specify the explanatory variables. Closely combining the information about SFAS No.52 from The Wall Street Journal and financial analyst's forecast (Value Line), this study shows that the differential income from adopting this new promulgation has information content. Specifically, this study accumulates CAR's from the Value Line quarterly earnings forecast date to the WSJ quarterly earnings-announcement date for the quarter a

company made the accounting change of SFAS No.52. CAR's thus cumulated are found to be significantly correlated with the quarterly earnings signal as well as income impact signals from the adoption of SFAS No.52. This information-content argument for SFAS No.52 is further verified by different groups based on the information disclosed in the WSJ. The methodology designed in this study can be generally applicable to subsequent studies on the market reaction to the differential income from accounting changes.

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Chapter I

INTRODUCTION

1.1 ACCOUNTING-PRINCIPLES CHANGES IN FOREIGN CURRENCY TRANSLATION

FOREIGN CURRENCY TRANSLATION METHODS BEFORE 1976

During the late sixties and early seventies, large deficits in the U.S. international trade balance made the fixed-exchange-rate and the U.S. dollar-based world monetary system difficult to maintain. Following the collapse of the Bretton Woods Agreement (of 1944) in 1971, major currencies were allowed to float and the U.S. dollar was devalued dramatically. In this time of turbulent exchange rates, several different methods of accounting for foreign currency translation coexisted in practice. Around 41% of U.S. multinational companies used the CURRENT-NONCURRENT METHOD (allowed by ARB No. 4, 1939); 40% used the MONETARY-NONMONETARY METHOD (allowed by APB No.6, 1965); and 9% used other hybrid methods (the other 10% were non-respondents). (Evans, Folks, and Jilling, 1978.)

TEMPORAL METHOD UNDER SFAS NO.8

In order to unify the treatment of foreign currency translation and establish the accounting standard for related foreign currency transactions. the Financial Accounting Standard Board (hereafter FASB) issued Statement of Financial Accounting Standard (hereafter SFAS) No.8 in 1975 and advocated the TEMPORAL METHOD as the only GAAP for foreign currency translation. The Temporal Method assumes that all foreign subsidiaries are dependent entities of the U.S. parent company. Therefore, translation gains/losses from foreign entities' statements are included in consolidated income statement. The Temporal Method related foreign financial statement accounts with the date the underlying measurement was made. Therefore, the measurement date determined the exchange rate to be used; i.e. the elements stated at current (e.g. cash) or future (e.g. long-term debt) prices were translated into U.S. dollars at current exchange rates; the elements stated in past prices (e.g. depreciation) were translated at historical exchange rates. The translation gains or losses were included in the income statement to reflect the risks of foreign operations undertaken by the U.S. parent company. The exchange gains or losses from foreign currency transactions were also recognized in current income. The only exception were those exchange gains/losses which resulted from forward exchange contracts that were designated to hedge "firm and uncancelable" foreign-currency commitments. In this case, the exchange gains or losses were deferred and included in the measurement of related foreign currency transactions. (SFAS No.8, para. .022-.029.)

SFAS No.8 was severely criticized for its including unrealized translation gains or losses from going foreign concerns in current income. As a result, there were heated debates in industry, the financial community, the academic community, and accounting practitioners. In the early Spring of 1978, the FASB conducted a post-enactment review on SFAS No.1 to No.12. Of the 200 written comments to the FASB, 176 dealt with SFAS No.8. And 174 (98.8%) of them were critical of it. Faced with such high pressure, the FASB started to revise this standard and finally promulgated SFAS No.52 on December 15, 1981 to supersede SFAS No.8 by a 4:3 majority in the Committee. This ended the six-years governance (1976-1981) of SFAS No.8 as the only standard for foreign currency translation. The SFAS No.52 was effective for fiscal years beginning on or after December 15, 1982. However, earlier application was encouraged.

1.2 FOREIGN CURRENCY TRANSLATION UNDER SFAS NO.52

FUNCTIONAL CURRENCY APPROACH UNDER SFAS NO.52

SFAS No.52 is, in fact, the product of compromise.[1] Designing a new term called "functional currency", SFAS No. 52 cleverly delivered the "hot potato" of determining translation methods to corporate management. SFAS No.52 defines the functional currency as follows:

> "An entity's functional currency is the currency of the primary economic environment in which the entity operates; normally, that is the currency of the environment in which an entity primarily generates and expends cash."
> (SFAS No.52, para. 5.)

Evaluating six indicators (i.e. cash flow, sale price, sale market, expense, financing, and intercompany transactions) set by SFAS No.52 (para. 42), management determines the functional currencies for foreign entities. If the functional currency of a foreign entity is determined as lo-

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[1] This compromise may partly come from the bitter experience of the FASB with SFAS No.19 (1977). In SFAS No.19, the FASB required the "Successful-Effort Accounting" to be the only GAAP for all oil and gas companies. (For the determinants of this intramethod choice, see Lilien and Pastena, 1982.) However, this advocacy was effectively reversed by the Securities and Exchange Commission (hereafter SEC) (See ASR No. 253, 1978), mainly due to the tremendous pressure from the oil giants. The SEC allowed the registered oil and gas companies to use either the "Successful-Effort Accounting" or the "Full-Cost Accounting" in their primary statements, and add a "Reserve Recognition Accounting" (RRA) as a supplementary reporting in footnote. To some comfort of the FASB, the SEC required those companies selecting the Successful-Effort Accounting to follow the rules in SFAS No.19.

cal currency (i.e. an independent foreign subsidiary), then the method to be used to translate foreign-currency financial statements into U.S.-dollar statements is the CURRENT METHOD. On the other hand, if the functional currency is determined as the U.S. dollar (i.e. a dependent foreign subsidiary), then the method to be used is the TEMPORAL METHOD (with deferred income taxes and the policy acquisition costs of insurance companies now being translated at current exchange rate. SFAS No.52 gives this the new name of "remeasurement". See SFAS No.52, paras. 10 and 47 to 54). The only exception lies in the foreign entities in a "highly inflationary economy".[2] In that case, foreign financial statements are translated in the Temporal Method "as if the functional currency were the reporting currency (i.e. U.S. dollar)" (SFAS No.52, para. 11). SFAS No.52 believes providing "different accounting for significantly different economic facts" is "a significant virtue of functional currency approach." (SFAS No.52, para. 84.)

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[2] "(A) highly inflationary economy is one that has cumulative inflation of approximately 100 percent or more over a 3-year period" (SFAS No.52, para. 11) such as Argentina, Israel, Brazil, Ghana, Peru, Turkey, etc. (1978-1981). Using the Temporal Method to translate foreign entities in the highly inflationary economy is nothing but a pragmatic decision of the FASB. The superficial reason for this is that "a currency that has largely lost its utility as a store of value cannot be a functional measuring unit" (SFAS No.52, para. 107).

CURRENT METHOD

The CURRENT METHOD for foreign currency translation of SFAS No.52 is the opposite of the temporal method under SFAS No.8. Basically, the Current Method treats the foreign entity as an equity investment. Consequently, the translation process does not distinguish between individual accounts of assets and liabilities. All assets accounts and liabilities accounts are translated at the current exchange rate at the balance sheet date; shareholders' equity accounts are translated at historical rates. Further, theoretically, revenues, expenses, and income accounts in the income statement should be translated at the current rates as incurred. Considering the bookkeeping costs, SFAS No.52 allows one to use "an approximately weighted average exchange rate for the period" to translate those elements (SFAS No.52, para. 12).

The translation gains or losses resulted from the Current Method appears on the balance sheet in a special new account, "Cumulative Translation Adjustment" (hereafter CTA), of shareholders' equity, and it resides in this account until the foreign entity is sold or liquidated (SFAS No.52, para. 14). Following the same rationale, the foreign exchange gains or losses resulting from foreign-currency transactions that are of long-term investment nature or are designated as hedge of net investment should enter the CTA, rather than recognizing it currently (SFAS No.52, para. 20).

As expected by the FASB, the debate regarding foreign currency translation ceased after the promulgation of SFAS No.52 in 1981 due to the fact that it simultaneously pleases two conflicting parties: those who advocated Temporal Method and those who were in opposition to it. To illustrate: SFAS No.52 was effective two years after its promulgation in 1981, but earlier application was allowed. As a result, 142 (36.9%) of 385 multinational companies in the AICPA-600 immediately adopted the SFAS No.52 in 1981; 167 (43.4%) of them adopted it early in 1982. In total, 80.3% (309/385) of AICPA-600 companies adopted SFAS No.52 earlier than required. Only 19.7% (76/385) of multinationals adopted it after 1982 as required. The popularity of SFAS No.52 is clearly reflected in these statistics.

1.3 SFAS NO.52 AND MANAGEMENT JUDGMENT

MANAGEMENT JUDGMENT & FOREIGN CURRENCY TRANSLATION

Flexibility is the reason why SFAS No.52 was welcomed by the industry. Management determines the functional currencies, and thus determines the translation methods to be used. SFAS No.52 believes "management is in the best position to obtain the pertinent facts and weight their (i.e. six indicators') relative importance in determining the functional currency for each operation" (SFAS No.52, para. 41). Therefore, "Management's judgment is essential and paramount in this determination (of functional currency)" (SFAS No.52, para. 41). Even for the more rigid situation where a foreign entity is in a highly inflationary economy, management plays its role too. "The definition of a highly inflationary economy as one that has cumulative inflation of approximately 100 percent or more over a 3-year period is an arbitrary decision. In some instances, the trend of inflation might be as important as the absolute rate. It is the Board's intention that the definition of a highly inflationary economy be applied with judgment (of management)" (SFAS No.52, para. 109).

MANAGEMENT JUDGMENT & FOREIGN CURRENCY TRANSACTION

Management judgment applies not only to foreign currency translation, but also to transactions. A foreign currency transaction is defined as "(a) transaction denominated in a currency other than the entity's functional currency." (SFAS No.52, para. 15.) Although accounting rules for foreign currency transaction are basically unchanged for SFAS No.8, SFAS No.52 takes a more flexible position. For example, in order to qualify for the exceptional deferral treatment on exchange gains or losses from a foreign currency transaction, the hedging instrument must be a forward exchange contract with the matching of both date and currency with a "firm and uncancelable" foreign commitment under SFAS No.8 (SFAS No.8, para. .027). However, SFAS No.52 releases this strict requirement. Aside from a forward contract, any other type of foreign currency transaction (e.g. currency swaps, foreign currency cash balances or certificates of deposit, foreign currency loans, etc.) "designated as, and effective as, a hedge of a 'firm' foreign currency commitment" qualifies for deferral (SFAS No.52, para. 21). Here, SFAS No.52 does not require that the foreign-currency commitment should be 'uncancelable'. It also does not require any linkage of the date of hedging transaction with the date of hedged commitment, because "the existence of an economic hedge is a question of fact, not of form" (SFAS No.52, para. 133). Who determines the "fact"? The management does. The same management also determines the "fact" of the economic hedge of a net investment in a foreign entity and the hedge of a intercompany foreign currency transaction that is of a long-term investment nature, in which exchange gains or losses are also exceptionally reported as translation adjustments (SFAS No.52, para. 20).

"Because management's judgment will be required to identify, weight, and interpret the facts within the objectives and guidance in the Statement," SFAS No.52 acknowledges, "that is always a risk when standard must be applied with judgment." Nevertheless, SFAS No.52 justifies this risk:

> "The Board believes that risk is likely to do less damage to the usefulness of financial reporting than arbitrary rules that overlook economic differences and require different situations to be accounted for as though they were the same (as SFAS No.8 did)."
> (SFAS No.52, para. 84.)

1.4 RESEARCH ISSUES ON SFAS NO.52

Since SFAS No.52 relies heavily on management judgment, management is relieved from the binding of including translation gains/losses in current income. Therefore, management is able to use its discretionary power to derive the foreign risk management practice in the direction of effective usage of corporate resources. An interesting question is that, "does the market react to the differential income from this accounting change that is signalling the possible change in foreign risk management?" This study develops the "New-Information-de-Facto" Approach" to investigate this problem. This approach is a theoretical correction on previous studies and is generally applicable to accounting-change studies. (See Section 2.2, "DEVELOPMENT IN METHODOLOGY FOR INFORMATION-CONTENT STUDIES".)

Chapter II

THEORETICAL BACKGROUND

2.1 REPORTED EARNINGS AND STOCK PRICES

Since the seminal work of Ball and Brown (1968), a series of studies showed that reported earnings conveyed information to investors. In other words, results from various research revealed the existence of a statistically significant association between abnormal residual returns and unexpected net income reported, no matter what the reported income was annual (e.g. Ball and Brown, 1968; Patell, 1976.) or quarterly (e.g. Brown and Kennelly, 1972; Foster, 1977.); no matter what the expected income was in the naive model (e.g. Ball and Brown, 1968), in the Box-Jenkins model (e.g. Foster, 1977.), or in managements' forecast (e.g. Patell, 1976.); and no matter what the unexpected reported income was in sign only (e.g. Ball and Brown, 1968.) or in both sign and size (e.g. Beaver, Clarke and Wright, 1979; Hagerman, Zmijewski and Shah, 1984). That reported earnings have information content is one of the most consistent arguments in accounting research.

2.2 DEVELOPMENT IN METHODOLOGY FOR INFORMATION-CONTENT STUDIES

In accounting and finance literature, "information content" refers to the usefulness of a piece of news for investors. If a piece of news is useful for investors' decision-making, then it has information content; otherwise, it does not. Information content studies are important in accounting because the first major objective of financial reporting is to provide useful information for investors in making rational investment decisions (SFAC No.1, 1978, para. 34). Therefore, investigating the usefulness of accounting presentations is one of the major areas in which accounting researchers are interested.

This study classifies news information into two levels: the lower-level non-numeric news and the higher-level numeric news. The lower-level non-numeric news only conveys event information (i.e. "what happens"), such as declaration of stock splits or the accounting-standard-setting processes. It does not convey any numeric information. On the other hand, the higher-level numeric news not only conveys non-numeric event information, but also conveys numeric information which includes "qualitative attribute" (increase or decrease) and "quantitative attribute" (how much of it). Based on the characteristics of news, three categories of methodologies in information content studies can be found in literature. That is: (1) Change Approach, (2) Level Approach, and (3) Pattern Approach. Each of them answers different aspects of information content, as discussed in the following.

2.2.1 CHANGE APPROACH

This approach answers the following question: "does stock price change because of unexpected change in explanatory variables caused by new information?" If it does, then this piece of news has information content. The Change Approach can be employed for the study of numeric news only. It directly explores the relationship between abnormal residual returns with unexpected change in explanatory variable(s); and, generally, the former is regressed on the latter(s). This is "the more popular and less restrictive method of observing price reaction to accounting change" (Lev and Ohlson, 1982:268). Although this methodology was used in many studies (e.g. Magee, 1975; Beaver, Clarke, and Wright, 1979; Beaver, Griffin and Landsman, 1982; Hagerman, Zmijewski, and Shah, 1984; among others), the first paper employing this methodology to investigate the price reaction to the accounting change of SFAS No.52 is Haw, Lilien and Pastena (1985).

However, the Change Approach "depends crucially on the expectation model used and on an exact identification of the timing of information disclosure." (Lev and Ohlson, 1982:308). Therefore, studies employing this approach should have numerical news, relatively objective market expectation, and clear identification of disclosure dates. In this study, the Change Approach is employed to investigate the first research issue, i.e. the effect of incremental or decremental income from the accounting change of SFAS No.52 on stock prices.

IMPROVEMENT OF THIS STUDY IN CHANGE APPROACH

Using (a) lump-sum annual income impact of this accounting change, (b) naive model for market expectation, (c) cross-sectional dates, and (d) cumulative weekly residuals over one year, Haw, Lilien and Pastena (1985) argued that the market reacted to reported annual earnings under the old rule and differential income resulted from the accounting change. Both were differently associated with the one year's cumulative weekly residuals. However, Hagerman, Zmijewski, and Shah (1984) showed that examining the earnings signal around the annual report date should focus on the fourth-quarter signal rather than the annual signal. (HZS, 1984:538). The HZS's conclusion was drawn from a simple scenario where no accounting change occurred in the year. Under the complex scenario where an accounting change occurs in any quarter, this study further shows that using lump-sum annual formulation mis-specifies the explanatory variables. (See Chapter VI, "New Information de Facto and Explanatory Variables".) This is a theoretical correction of previous studies on accounting changes. The framework of analysis is based on the concept of "new information de facto". Therefore, this study refers this approach as the "New-Information-de-Facto Approach" to differentiate it from those used in previous studies. This approach is generally applicable to other accounting-change studies.

2.2.2 LEVEL APPROACH

This approach answers the question: "Is the information of an explanatory variable one of the ingredients that form the stock price during the price formation process in the period(s)?" If it is, then this explanatory variable has information content. And in some sense, it measures the usefulness of accounting presentations. The Level Approach stems from the stock valuation models. And, generally, the market value of the firm is regressed with the earnings-related explanatory variable, the risk, and the growth. Formal theoretical development and empirical testing of the Level Approach appeared in the classical works of Modigliani and Miller (1958), Miller and Modigliani (1966), Sharpe

(1964), Lintner (1965), McDonald (1971), and Litzenberger and Rao (1971). Examples of its application to financial reporting issues appeared in Foster (1977), Bowen (1981), Beaver and Landsman (1983), Daley (1984), Haw and Lustgarten (1985), Ohsen (1985), Tse (1986), among others.

The Level Approach does not need the market expectation to construct its explanatory variables. It also does not have to identify the exact disclosure date, because theoretically, the Level Approach uses the stock price at year end to calculate the market value of a firm. The Level Approach is especially appropriate for numeric news without clear market expectations and/or clear disclosure dates; and the market is not so sensitive to the changes of them, so no financial analyst forecasts these variables; but in some way the market incorporates them as ingredients during the stock-price formation process in the period(s). The "cumulative translation adjustment" account is an example.

2.2.3 PATTERN APPROACH

This approach answers the question: "Does stock price behave differently along the period(s) containing the event?" If it does, then this event has information content. The Pattern Approach is especially suitable for non-numeric news studies in information content. And generally this approach looks at the abnormal-residuals pattern or the cumulative abnormal-residuals pattern along the time period that an event occurred. The Pattern Approach was first employed in the seminal work of Fama, Fisher, Jensen, and Roll (1969). The data requirement of this approach is quite simple. It only needs lower-level non-numeric news and disclosure dates. Market expectation is not required in this analysis. However, in order to make sure that this residual pattern specifically happens only for the affected firms ("experimental group"), selecting a "control group" is necessary for the Pattern Approach. (The simplicity of data requirement for the Pattern Approach also makes the selection of a "control group" possible.) The Pattern Approach has been applied to many accounting standard-setting process studies. (e.g. Dukes, 1978; Dyckman and Smith, 1979; Ro, 1980; Vigeland, 1981; among others.)

USING PATTERN APPROACH IN NUMERIC NEWS

Although the Pattern Approach is especially suitable for lower-level non-numeric news, it can be employed in the study of higher-level numeric news by ignoring its numeric characteristics. (e.g. Kaplan and Roll, 1972; Duke, 1978; Harrison, 1978; among others.) Most information-content studies in accounting changes did so. Due to the dropping of numeric characteristics and the use of a control group, the Pattern Approach is an indirect testing on information content at best.

Ignoring the numeric characteristics of numeric news always loses valuable information. For example, applying the Pattern Approach to investigate the market reaction to the accounting changes of investment tax credit and depreciation, Kaplan and Roll (1972) totally ignored the numeric information contained in the incremental or decremental income from the changes. In fact, the information they used is nothing but an "event" itself, without touching any numeric characteristics of the news. Therefore, their results are not able to answer these questions: "Does the market react to the differential income from accounting change?" or "Does the market react differently between income-increase companies and income-decrease companies, or between big income-increase companies and small income-increase companies for the same accounting change?" The answers of these questions are contained in the numeric characteristics of the numeric news.

Some researchers artificially reduced ratio scale to classificatory scale in their analyses. That will cause subjective classification and unreliable statistical results. For example, trying to use the "qualitative" attribute of the numeric news in Pattern Approach, Harrison

(1978) classified accounting-change firms into income-increase firms and income-decrease firms. The criterion of classification is based on the lump-sum annual differential income from the accounting change. However, as shown in this study (Chapter VI, "New Information de Facto and Explanatory Variables"), using lump-sum annual data will misspecify the explanatory variables. That is, an annual income-increase firm is not necessarily an quarterly income-increase firm. There is no theory for setting such a classification criterion. The Pattern Approach shows its limitation here due to its ignoring the "quantitative" attribute of numeric news.

The necessity of a control group in the Pattern Approach causes another measurement error. Generally, researchers select members of a control group in terms of beta, industry, and size. In fact, no perfect candidate in the control group exists in the real world. And very probably, the criteria for selecting a member of the control group will conflict between candidates. Researcher's judgment applies here. For the same experimental group, different researchers may select different control groups. And the differences in variables between the experimental group and the control group may vary. Therefore, the statistical results may depends upon the taste, preference, and habit of the researchers. It does not pay to drop all or part of the numeric characteristics of numeric news and introduce a subjective control group in the Pattern Approach just for the purpose of avoiding the market expectation in the Change Approach; This is especially so when the best surrogate of market expectation of earnings is empirically found. (e.g. Brown and Rozeff, 1978; Fried and Givoly, 1982.)

Some studies pooled several different accounting changes together for analyses, for example, Ball (1972), Harrison (1978), among others. "Without an unambiguous preliminary specification of expected (market) effect", the empirical findings may result from "conflicting and partially offsetting effects of different accounting changes" (Lev and Ohlson, 1982:269). For the purpose of purifying the effect of accounting change, taking only one notable accounting change, such as SFAS No.52, is a better research strategy.

2.3 THEORETICAL AND METHODOLOGICAL IMPROVEMENT IN THIS STUDY

(1) QUARTERLY EARNINGS VERSUS ANNUAL EARNINGS

Public companies are required to issue interim reports to their shareholders and 10-Q's to the SEC. Financial press treats quarterly income announcements as important corporate news, and disclose them quickly. In case a company changes its accounting principle in any specific quarter, GAAP requires it to disclose this fact in their interim report right away (APB Opinion No.28; and SFAS No.3). For investigating the market reaction to an accounting change, precisely identifying the quarter the company made the change is very crucial to the study. For example, suppose an accounting change was made in the first quarter and the market had reacted to this change when the first-quarter interim report was issued. Then, studying the market reaction to this accounting change at the year end is , obviously, less powerful. Even if the accounting change was made in the fourth quarter, as first-year early adopters of SFAS No.52 did, investigating the quarterly impact of this change is much more sound in theory than ambiguously using lump-sum annual impact. (See Chapter IV, "INCOME IMPACT ON THE QUARTER AND ON THE YEAR".) This point has been totally ignored for all previous studies in accounting changes. Based on the new information provided to the market ("New Information de Facto"), this study provides a theoretical correction for this issue. (See Chapter VI, "NEW INFORMATION DE FACTO AND EXPLANATORY VARIABLES".)

Aside from the validity in theory, using timely quarterly data has another benefit in empirical study. That is increasing the sample size. A company making more than one accounting changes in the same year did not necessarily change these accountings in the same quarter. Therefore, focusing on the quarter a company made the specific accounting change can avoid the unnecessary deletion of the sample. For example, 136 of AICPA-600 companies adopted SFAS No.43 ("Accounting for Compensated Absences") in 1981, when 144 of AICPA-600 adopted SFAS No.52. If annual data is used, a substantial portion of 1981 adopters of SFAS No.52 will be screened because of dual accounting changes in the same year. However, SFAS No.43 was effective for fiscal years beginning after December 15, 1980. (SFAS No.43. para. 8.) For companies with the fiscal year ended December 31, SFAS No.43 were adopted in the first quarter of 1981. This spread in adoption quarters makes studies focusing on quarterly data have larger sample size.

(2) NEWS TREATMENTS

No other standards issued by the FASB were subjected to so much keen criticism as the accounting principle of foreign currency translation. Nor, in the history of FASB so far, has an accounting principle been reversed by the FASB itself and replaced with half of it being totally new and reversal of the previous principle, except the foreign currency translation. The accounting change of SFAS No.52, therefore, was highly noticed by the corporate management and reporters of the financial press, especially The Wall

Street Journal (hereafter WSJ). In the section of "Digest of Corporate Earnings Report" of the WSJ, the accounting change of adopting SFAS No.52 was significantly noted. And in many special staff reports for popular corporations in the WSJ, the impacts of this change on the quarterly income and annual income were also further discussed. The disclosure of the accounting change of SFAS No.52 on the WSJ makes event dates traceable. Furthermore, the new information that the WSJ disclosed when earnings were announced provides researchers a criterion for classifying the sample. (See Section 10.1, "DISCLOSURE OF ADOPTING SFAS NO.52 ON THE WSJ".) The empirical results show the appropriateness of classifying samples according to the information actually provided by the WSJ. (See Section 11.5, "GROUPING TESTS FOR INFORMATION CONTENT".) This new grouping criterion can be employed for other studies concerning market reaction to accounting changes.

(3) FINANCIAL ANALYST'S FORECAST AND ACCUMULATION PERIOD

Recent development in accounting and finance research also provides a remedy for the problem of market expectation of earnings. Studies showed that the best surrogate for market expectation of earnings is the financial analysts' forecast, compared to other forecast models. (e.g. Brown and Rozeff, 1978; Fried and Givoly, 1982, among others.)

Using the analysts' forecast as a surrogate of market expectation will increase the validity of tests.

Furthermore, this study also discovers that firms are apt to disclose the decision of adopting SFAS No.52 before the earnings are officially announced. Therefore, the accumulation period should be extended back to the issue date of the earnings forecast in order to capture the market reaction to the accounting change. In doing so, three pieces of information should be available:

1. the quarterly earnings forecast,
2. the basis of forecast (under old or new rule), and
3. the forecast date.

Among all available forecasts sources, only Value Line qualifies. (See Section 11.2, "DISCLOSURE OF ADOPTION DECISION.") These improvements have not been done so far in accounting-changes literature.

Chapter III

BASIS OF HYPOTHESIS

Following the general notion that reported income conveys information to investors, this study hypothesizes that differential income from the accounting change of SFAS No.52 has information content. This hypothesis is based on the reasoning that to change accounting principle from SFAS No.8 to SFAS No.52 will trigger changes in management practices for foreign exchange risk, especially the hedge activities, and thus the cash flows and value of the firm will also be changed. Since the economic reality before and after adopting SFAS No.52 is expected to be different, the differential income from this accounting change, therefore, is not a mere "paper" income. Rather, it represents the expected change in future cash flow, and will be used by investors to adjust stock prices. The following sections expound this reasoning.

3.1 ACCOUNTING HEDGE VS. ECONOMIC HEDGE

The basis of the above hypothesis comes from the differences between accounting hedge (under SFAS No.8) and economic hedge (under SFAS No.52) in the following respects:

1. MOTIVATION: Requiring to include translation gains/losses in current income under SFAS No.8 gave management a motivation to hedge exposed net asset/liability position (ACCOUNTING HEDGE). SFAS No.52, on the other hand, removes this motivation for those multinationals having self-sustained foreign entities. Consequently, the management can hedge foreign net assets economically (ECONOMIC HEDGE).
2. TRANSLATION GAINS/LOSSSES FROM HEDGES: SFAS No.8 required translation gains/losses from accounting hedge should be included in current income to offset that from exposed net asset/liability position. On the reverse, SFAS No.52 stipulates that translation gains/losses from an economic hedge should be moved to CTA in the balance sheet. Accordingly, switching accounting to SFAS No.52 will result in differential income which reflects the differences between accounting hedge and economic hedge.
3. HEDGING TOOL: SFAS No.8 mandated that the forward exchange contract is the only qualified tool for accounting hedge. However, SFAS No.52 allows any for-

eign currency transaction to act as a tool for economic hedge.

Therefore, the differential income from accounting change of SFAS No.52 represents a signal for possible changes in hedging activities, and the market will react to it. The following will discuss these arguments in detail.

3.1.1 SFAS NO.8: ENCOURAGING ACCOUNTING HEDGES IN FORWARD CONTRACTS

CREATING THE NEED

SFAS No.8, in fact, encouraged companies to engage in "ACCOUNTING HEDGE" in the expensive and risky forward exchange market. First of all, SFAS No.8 required to include unrealized translation gains/losses from exposed net assets/liabilities in the current income. This requirement itself CREATES THE NEED of management to smooth them out. This motivation can range from personal purpose to corporate policy. On the personal level, survey studies revealed that around one third of the sampled companies directly included translation gains/losses in management compensation plans (Duke, 1978; Shank et. al., 1980). This connection becomes the most direct incentive for management in minimizing the income fluctuation from foreign currency translation. Even for the other companies not directly including translation gains/losses in their compensation plans, management still has incentives to do so. Negative income statements, lower dividend payments, or unstable income streams may cause the image of incompetence that management tries to avoid. Since translation gains/losses might affect the labor market perception of management ability, management would prefer to remove them from the income statement. As a treasurer of Hewlett and Packard Co. said,

> "It's tough to have a chairman get up and say with a straight face, 'We took a $100 million loss (from currency translation), but it doesn't matter.'"
> (Business Week, July 13, 1981:97)

On the corporate level, companies also have desire to show a constant growth in earnings (e.g. Gorden, 1964; Gonedes and Dopuch, 1974, among others.) Just as a Citicorp's vice president commented,

> "Corporations don't like surprise in their earnings. They don't want to scare shareholders."
> (Business Week, ibid.)

In the viewpoint of the corporation, removing translation gains/losses is also desirable.

PROVIDING THE TOOL

SFAS No.8 not only created the need for management to smooth the translation gains/losses from current income, but also PROVIDED A TOOL for it. SFAS No.8 required translation gains/losses from a "forward contract that hedges a foreign currency exposed net asset or net liability position" should be "included in determining net income for the period." (SFAS No.8, para. .023.) Thus, translation gains/losses from hedging contracts would offset that from accounting exposure:

> "A gain or loss shall be included in determinating net income for the period in which the rate changes if the gain or loss pertains to a forward contract that is intended to be a
> (a) hedge of a foreign currency exposed net asset or net liability position,
> (b) hedge of a foreign currency commitment that does not meet the conditions described in paragraph .027 (i.e. for deferral treatment), or
> (c) speculation."
> (SFAS No.8, para. .023.)

Notice here that a forward contract was the only "official" tool for counter-balancing the income fluctuation from accounting exposure under SFAS No.8. No other tools (e.g. currency swaps, foreign currency cash balance or certificate of deposit, etc.) qualified, though they might cost less. Obviously, SFAS No.8 encouraged companies to hedge the accounting exposures in the expensive forward exchange market. Results of survey studies also manifested that around two third of the sampled companies entered the forward market to cover accounting exposure after the promulgation of SFAS No.8 in 1976. (PMM, 1978; Shank et. al., 1980.)

3.1.2 SFAS NO.52: ENCOURAGING ECONOMIC HEDGES IN VARIOUS TOOLS

REDUCING THE NEED

As stated in Section 1.3, SFAS No.52 leaves the determination of a "functional currency" (and thus the translation method) to management judgment. Although this determination should be guided by six indicators set by the Statement, management, however, has paramount discretionary power for it. Consequently, the need for management to spend extra resources for income smoothing purpose will be reduced.

ECONOMIC HEDGE

Perhaps the most important contribution of SFAS No.52 is to drive a company from "accounting hedge" to "economic hedge" and, consequently, lowering the hedging cost. Contrary to the old rule, SFAS No.52 now requires that "gains and losses on the"..."foreign currency transaction that are designed as, and are effective as, ECONOMIC HEDGES of a net investment in a foreign entity"..."shall NOT be included in determining net income but shall be reported in the same manner as translation adjustments":

> "Gains and losses on the following foreign currency transactions shall not be included in determining net income but shall be reported in the same manner as translation adjustments (paragraph 13):
> a. Foreign currency transactions that are designed as, and are effective as, economic hedges of a net investment in a foreign entity, commencing as of the designation date.

> b. Intercompany foreign currency transactions that are of a long-term-investment nature (that is, settlement is not planned or anticipated in the foreseeable future), when the entities to the transaction are consolidated, combined, or accounted for by the equity method in the reporting enterprise's financial statements."
> (SFAS No.52, para. 20.)

Three concepts should be specially noted from the above paragraph:

1. Economic hedges replace accounting hedges. SFAS No.52 does not encourage companies to hedge the exposed NET ASSET accountingly. That is, hedging the net exposed position in accounting value. Instead, the new rule urges to hedge the NET INVESTMENT economically. Companies determine the economic values of their foreign investments and hedge them.
2. Any "foreign currency transaction" replaces a "forward contract". A "foreign currency transaction" is any transaction "denominated in a currency other than the entity's functional currency." (SFAS No.52, para. 15.) SFAS No.52 does not limit the hedging tool to be a forward exchange contract only. Any foreign currency transaction, e.g. currency swaps, foreign currency balances or certificates of deposit, etc., qualifies as a hedging tool only if it is "designed as" and "effective as" a economic hedge of a net investment. Therefore, management can choose a hedging tool and thus lower the hedging cost.

3. Exclusion of translation gains/losses in income replaces inclusion. Under SFAS No.52, the translation gains/losses from economic hedge of a net investment shall not be included in current income, but reported in the CTA. Therefore, hedges of a net foreign investment will not be for income smoothing purpose any longer.

The new standard of translation, together with that of transaction stated later, makes SFAS No.52 a much more popular GAAP than the old rule because it enables companies to use their resources more effectively.

3.1.3 SFAS NO.52 LOOSENS THE REQUIREMENTS OF SFAS NO.8 FOR DEFERRAL

Basically, both SFAS No.52 and SFAS No.8 recognize translation gains or losses from foreign currency transactions in current income. The only exception for the above rule, under SFAS No.8, is a forward contract "that is intended to be a hedge of an identifiable foreign currency commitment." (SFAS No.8, para. .024, .027.) In this case, the translation gains/losses from the hedging tool "shall be deferred and included in the measurement of the related foreign currency transaction." (SFAS No.8, para. .024; SFAS No.52, para. 21.) Nevertheless, in order to qualify a hedge, a forward contract must meet " all of the following conditions" under SFAS No.8 (emphasis quoted):

> "a) The life of the forward contract extends from the foreign currency commitment date to the anticipated transaction date or a later date.
> b) The forward contract is denominated in the same currency as the foreign currency commitment.
> c) The foreign currency commitment is firm and uncancelable."
> (SFAS No.8, para. .027)

However, the new standard loosens this tough requirement:

> "A foreign currency transaction shall be considered a hedge of an identifiable foreign currency commitment provided both of the following conditions are met:
> a. The foreign currency transaction is designated as, and is effective as, a hedge of a foreign currency commitment.
> b. The foreign currency commitment is firm."
> (SFAS No.52, para. 21)

Three old requirements are loosened by the new standard:

1. SFAS No.52 does not limit hedging tool to be a forward contract only. Any "foreign currency transaction", including currency swaps, qualifies.
2. SFAS No.52 does not put any requirements on the LIFE and denominated CURRENCY of a hedging tool. It does not require that the life of the hedging tool must be extended to at least the anticipated transaction date. It also does not mandate that the denominated currency of the hedging tool to be the same currency as the foreign currency commitment. Any foreign currency transaction "designated as, and being effective as, a hedge of a foreign currency commitment" qualifies.

3. SFAS No.52 does not require the foreign currency commitment to be "uncancelable". A "firm" commitment is enough.

Apparently, the new standard is much more "liberal" (a term used by the WSJ on February 11, 1982 when reporting the quarterly results of McGraw-Edison Co.) than the old one. Since management has much discretionary power to choose the hedging tool, the hedging cost is expected to be lower than that under the old rule. The necessity of wasting resources to hedge these transactions reduces under the SFAS No.52.

3.2 IMPACTS OF SFAS NO.52 TO HEDGING ACTIVITIES

Because of reasons stated before, the FASB anticipated that many enterprises will terminate "some or all hedges of the previous statement accounting exposure" after adopting SFAS No.52. (SFAS No.52, para. 37, 148.) This anticipation seems not an illusion. "As a result of adopting the new standard," the Air Products and Chemicals Co. disclosed in its 1982 annual report, "the company cancelled its parallel hedge program." (Air Products & Chemicals Co. Annual Report, 1982: 22). McDonald's Corporation also noted that "the company's prior years' financial and hedging practices contemplated different accounting for foreign currency translation than that required by Statement No.52." (McDonald's Annual

Report, 1982: 33). Under the new standard, its financial practices were changed.

So far, three survey studies concerning SFAS No.52 unanimously conclude that the use of forward contracts to hedge translation exposure has reduced after the promulgation of the standard. The first survey study is an interview-based study on treasurers by Andrews in 1983 (Andrews, 1984). In order to investigate how U.S. corporations responded to the SFAS No.52, Andrews interviewed corporate treasury personnel at sixteen of the largest U.S. industrial companies, one of the top ten U.S. service firms, and corporate advisory personnel at seven of the top twenty U.S. commercial banks and one foreign bank in 1983. Based on the interviews, Andrews found that:

> "Most of those asked said that many corporations which had hedged or offset balance sheet exposures under FASB 8 had scale back, or ended altogether, this practice following the adoption of SFAS No.52...
> Virtually all of those questioned said that some companies, including many deemphasizing or ending the practice of hedging balance sheet exposure, are now focusing more on transaction and/or economic exposure."
> (Andrews, 1984: 69.)

Andrews also reported that the majority of those interviewed said that the overall corporate activity in the exchanges had declined, and they thought that the volume of foreign exchange business done by corporations in the forward market had dropped under FASB 52. This observation gets support from another two survey studies by Evans and Doupnik (1986) and Griffin (1987).

Evans and Doupnik's study is a questionnaire-based study on corporate treasurers and conducted in 1984 (Evans and Doupnik, 1986). To investigate the impact of SFAS No.52 on the foreign exchange risk management (FERM) (i.e. hedging, financing, and other operating and financial practices), Evans and Doupnik conducted a questionnaire survey on corporate treasurers. Based on 167 completed questionnaires, they concluded that, in general, SFAS No.52 has not had a substantial impact on FERM practices. Nevertheless, no substantial impact on FERM "practices" does not mean no substantial impact on the "quantity" of the FERM. For the specific question about the differences between SFAS No.8 and SFAS No.52 in using forward contracts to hedge translation exposures, their survey study does show 27% reduction after the issuance of the new rule (Evans and Doupnik, 1986: 94, Table 8.5). Evans and Doupnik concluded that:

> "The usage of forward contracts to hedge balance sheet exposures has decreased for each (surveyed) currency (i.e. Canada, France, Japan, Switzerland, United Kingdom, and West Germany). On an overall basis, there are only 73% as many instances of hedging with forward contracts after the issuance of Statement 52 as they were before. Thus the usage of forward contracts to hedge balance sheet exposures has substantially dropped since the issuance of Statement 52."
> (Evans and Doupnik, 1986: 94.)

The third survey study is an interview-based study on analysts by Griffin (Griffin, 1987). In order to examine the effects of SFAS No.52 on financial analysts, Griffin interviewed 49 analysts in 1985. In response to the question that "Statement 52 prompted some companies to change the extent to which they use forward exchange contracts to hedge exposure of foreign assets and liabilities to change in exchange rate", 25 of 43 analysts agree with this statement, 4 were neutral, 4 disagreed, and 10 had no opinion (Griffin, 1987: 53, Fig. 4.3.2). Although this question is only the perception of financial analysts, it does indicate the direction of the effect of SFAS No.52 on the use of forward contracts.

Perhaps the most direct, and the most objective evidence of the impact of SFAS No.52 on hedging activities is the foreign exchange turnover survey conducted by the Federal Reserve Bank of New York in 1984:

> "The survey shows that outright forward transactions reported by U.S. banking institutions with nonfinancial customers declined 16 % to $8.8 billion in April 1983 from $10.5 billion in March 1980 even as total foreign exchange turnover reported by the banks rose about 44 percent."
> (Andrews, 1984: 70)

"While FASB 52 may not be the only reason for this decline," Andrews commented, "it seems to have palyed an important role." (ibid.)

3.3 INCOME IMPACT: A SIGNAL OF POSSIBLE HEDGE CHANGE

MAIN SOURCE OF INCOME EFFECT

The meaning of income effect of adopting SFAS No.52 is as a signal of possible change in hedging activities. Suppose a firm had an exposed net asset position and hedged it with a forward contract (i.e. an accounting hedge). Under SFAS No.8, when the U.S. dollar was appreciated in an accounting period, the firm's translation loss from the exposed net asset would be offset by the translation gain from the forward contract. Suppose further that the company decided to adopt SFAS No.52 early. Under the new rule, only translation gains/losses from an economic hedge can be moved to the balance sheet. Translation gains/losses from previous accounting hedge, to the extent it does not act as an economic hedge, still have to be included in current income. Unless this foreign entity is a dependent subsidiary or in a "highly inflationary economy", translation loss from net asset has to be moved to the balance sheet while translation gain from previous accounting hedge, to the extent it does not act as an economic hedge, still has to sit in current income. Thus an income impact from adopting SFAS No.52 emerges. The larger this amount, the higher the possibility that a firm will change its hedging activities.

SIGN OF INCOME EFFECT

Nevertheless, the sign of income impact of adopting SFAS No.52 is irrelevant as a signal of possible change in hedging activities. Generally, gains or losses from translation is a function of both of the following two factors:

1. exposed net asset or net liability position, and
2. the relative strength of the U.S. dollar to the local currency it operates.

Given no accounting hedges, the translation gains or losses are shown as Table 1.

TABLE 1

Translation Gains or Losses under No Accounting Hedges

Foreign Entity & Exchange Rate	Exposed Net Asset	Exposed Net Liability
U.S. $ Appreciation	LOSS	GAIN
U.S. $ Devaluation	GAIN	LOSS

However, if there is an accounting hedge, the translation gains or losses will be in the opposite direction. Given the U.S. dollar is appreciated relative to the local currency a foreign entity operates, the income effect of adopting

SFAS No.52 will be positive if this foreign subsidiary is in an exposed net asset position with accounting hedges. Whereas, if this subsidiary is in an exposed net liability position, the income effect will be negative.

On the other hand, given a foreign entity is in an exposed net asset position, it will have positive income impact from this accounting switch if it operates in the economy where the U.S. dollar is relatively stronger than local currency (e.g. Mexico Peso). However, if this foreign entity operates in another economy where local currency is relatively stronger (e.g. German Mark), a negative income impact will occur. (See Section 11.1, "INTERACTIVE RELATIONSHIPS AMONG EXPLANATORY VARIABLES".)

Therefore, in the eyes of an investor, the sign of income effect of adopting SFAS No.52 depends on foreign entity's exposure position and its location. As a signal of possible change in hedging activities per se, the sign of income impact of adoption is irrelevant.

Chapter IV

INCOME IMPACTS ON THE QUARTER AND ON THE YEAR

4.1 DISCLOSURE REQUIREMENTS OF SFAS NO.52

When SFAS No.52 was promulgated on December 15, 1981, firms with a fiscal year end of December had already published three interim reports informing investors of quarterly incomes under the old SFAS No.8 in the previous three quarters. When a company decided to adopt the new rule of foreign currency translation early in the fourth quarter of 1981, SFAS No.52 required the company to disclose the following information in the annual report of 1981:

1. Annual net earnings under the new SFAS No.52, of course.
2. Annual Impact of adopting the new rule.[3]

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[3] However, early adopters of 1982 are not required to do so:

> "Financial statements of enterprises that first adopt this standard for fiscal years ending on or before March 31, 1982 shall disclose the effect of adopting the new standard on income before extraordinary items, net income, and related per-share amounts for the year of the change. Those disclosures are not required for financial statements of enterprises that first adopt this standard for subsequent fiscal year."
> (SFAS No.52, para. 37.)

3. Restated Quarterly Incomes under the new rule for each quarter:

> "...The initial application of this Statement shall be as if the beginning of an enterprise's fiscal year."
> (SFAS No.52, para. 33.)

Therefore, early adopters that have already issued interim financial statements under SFAS No.8 must restate those interim statements in the annual report of 1981. (Peat, Marwick, Mitchell & Co., 1981; Coopers & Lybrand, 1982; Price Waterhouse, 1982.) This requirement is an exception of APB Opinion No. 20, where retroactive treatments are limited to LIFO switch-away, "complete contract"-"percentage completion" transfer and "full cost"-"success effort" transfer (APB Opinion No. 20, para. .27).

Generally, the accounting-change disclosure requirements for the interim report is the same as the annual report.[4] Therefore, if a company adopted SFAS No.52 in any quarter, the disclosure requirements for this accounting change in interim report would be similar to those for the annual report.

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[4] "Certain changes in accounting principle, such as those described in Section 1054.04, and 1051.05 require retroactive restatement of previously issued financial statements....Previously issued interim financial information should be similarly restated." (APB Opinion No.28, para. .25.)

4.2 QUARTERLY INCOME EFFECT OF ADOPTING SFAS NO.52

The disclosure requirements of the new SFAS No.52, combined with the previously-issued three interim reports under the old SFAS No.8, enable investors to know the fourth-quarter earnings under the old rule and the income impact of adopting the new rule for that quarter of change. Complying with the disclosure requirements of SFAS No.52, an early adopter of 1981 must report one annual earnings under the new rule, one annual impact of the adoption, and four restated quarterly incomes under SFAS No.52 in the annual report of 1981. Referring to three quarterly incomes under SFAS No.8 disclosed in the previous interim reports, an investor is able to know the quarterly income impacts of adopting the new rule. Thus, the fourth-quarter earnings under the old rule can be worked out also.

An excellent example is Vulcan Material Company, an early adopter of SFAS No.52 in 1981. This adoption made Vulcan reduce its 1981 net income by $854,000, which was not initially evident for some researchers. However, if one looks into the adoption impact on the fourth quarter, he will observe:

> "The adoption of FASB No.52 had the effect of increasing fourth quarter 1981 earnings before income taxes, net earnings and primary and fully diluted earnings per share by $420,000, $234,000 and $.02, respectively."
> (Vulcan Annual Report, 1981, Footnote 11: 29.)

The Vulcan Material Co.'s net income in 1981 can be broken down as Table 2 shows.

TABLE 2

The Breakdown of Annual Earnings with Accounting Change

Vulcan Material Co. (4Q/81) Unit: $1,000.

QUARTER	I-Q	II-Q	III-Q	IV-Q	ANNUAL
#8 income Impact	14,132 Q (323)	23,065 Q (618)	24,124 Q (147)	17,777 234	79.098 (854)A
#52 income	13,809 A	22,447 A	23,977 A	18,011 A	78,244 A

Exxon Corporation (4Q/82) Unit: $1,000,000.

QUARTER	I-Q	II-Q	III-Q	IV-Q	ANNUAL
#8 income Impact	1,240 Q (401)	885 Q (36)	1,070 Q (53)	1,121 360	4,316 (130)A
#52 income	839 A	849 A	1,017 A	1,481 A	4,186 A

* Q = data from quarterly reports.
A = data from annual report.
All other figures are plug numbers.

Notice that the Vulcan Material Co. increased its fourth-quarter earnings by $234,000 from the early adoption of SFAS No.52, although this adoption decreased its annual earnings for the year 1981 by $854,000. A similar situation happened for the Exxon Corp. (4Q/82). (See the same table.)

4.3 QUARTERLY IMPACT VS. ANNUAL IMPACT

IMPACT RANGE

In order to investigate the differences between quarterly and annual impacts, 385 multinationals of AICPA-600 are examined. Among 385 multinationals, 244 (385-144) firms disclosed annual impacts of adopting SFAS No.52, and 231 (385-154) firms disclosed quarterly impacts on income. Table 3 compares the impact ratios (income impact / income under SFAS No.8) between annual and quarterly data. Most adopters' impact ratios, both annual and quarterly, are distributed from -30% to +100%, but concentrated more within the range of -5% to +15%. When excluding immaterial effect of adopting SFAS No.52, the first three popular ranges for annual impact ratios are: 0%-5% (58), 5%-10% (33), and 10%-15% (22). For quarterly impact ratios, they are: 0%-5% (36), 5%-10% (33), and -5%-0% (19). Graphically, annual impact ratios are distributed steeper around original point than quarterly impact ratios are, as Figure 1 shows.

IMPACT DIRECTION

An interesting question about adoption impacts of SFAS No.52 is "Does a positive annual impact necessarily lead to a positive quarterly impact?" The answer is no. Among 385

TABLE 3

Impact Ratios Distributions of Annual and Quarterly Data

IMPACT RATIO RANGE*	Annual Income	Quarterly Income
<= -40%	1	1
(-40%, -30%]	0	3
(-30%, -20%]	0	5
(-20%, -15%]	1	2
(-15%, -10%]	0	4
(-10%, -5%]	3	3
(-5%, 0%)	6	19
Total Negative	11	37
Immaterial (0%)	59	47
(0%, 5%]	58	36
(5%, 10%]	33	36
(10%, 15%]	22	11
(15%, 20%]	12	7
(20%, 30%]	20	8
(30%, 40%]	9	12
(40%, 50%]	5	7
(50%, 60%]	3	3
(60%, 70%]	2	4
(70%, 80%]	1	4
(80%, 90%]	1	3
(90%, 100%]	0	1
> 100%	8	15
Total Positive	174	147
N/A	141	154
T O T A L	385	385

* Impact Ratio = (Income Impact)/(Income under SFAS No.8)

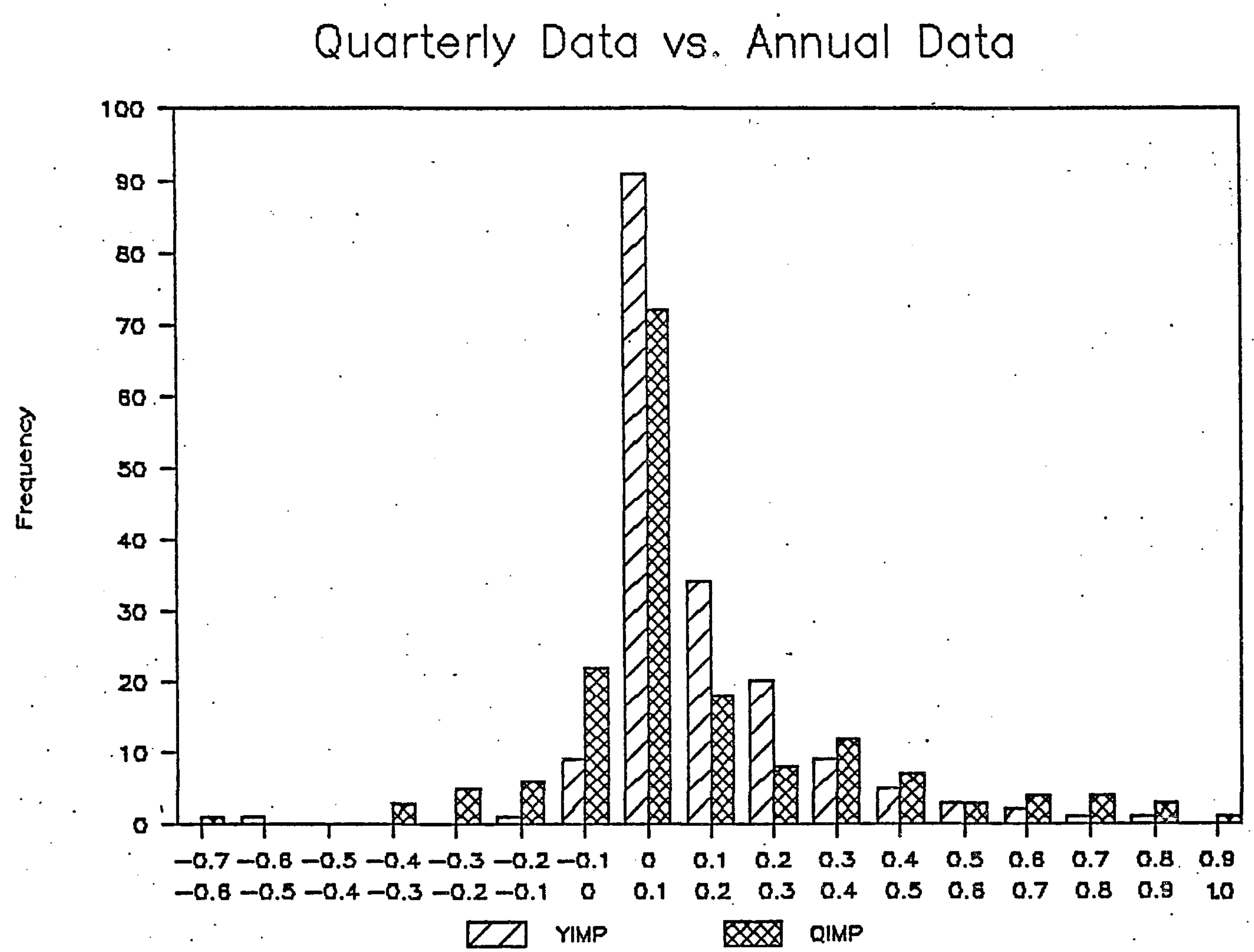

Figure 1: Impact Ratios Distributions

multinationals of AICPA-600, 215 (=385-141-154+125) firms disclosured both quarterly and annual income impacts of adopting SFAS No.52. For these 215 firms, 4 firms have both impacts as negative, 37 firms have both impacts as immaterial, and 133 have both impacts as positive. (See Table 4.) In total, 80.9% (4+37+133=174 of 215) of firms have the same impact directions for annual and quarterly data. The other 19.1% (3+2+3+30+3=41 of 215) of firms have different impact directions between annual and quarterly data.

TABLE 4

Impact Directions for Annual and Quarterly Data

ANNUAL ADOPTION IMPACT	QUARTERLY ADOPTION IMPACT				
	< 0	= 0	> 0	N/A	TOTAL
< 0	4	0	3	4	11
= 0	2	37	3	17	59
> 0	30	3	133	8	174
N/A	1	7	8	125	141
TOTAL	37	47	147	154	385

IMPACT DEGREE

From the preceding discussion, one may argue that there is no substantial differences between annual data and quarterly data since 80.9% (174/215) the firms have the same impact directions. However, this argument is not tenable when facing the detailed examination of impact degree. Table 5 is a cross-tabulation for annual and quarterly impact ratios classified by the impact ranges. As can be seen from Table 5, only 1 of the 4 firms having both impacts negative are located in the same impact range (-5%-0%). And only 26 (13+10+1+2) of 133 firms having both impacts positive are located in the same impact ranges. Excluding those having immaterial impacts, only 19.7% ((1+26)/(4+133)) of the firms have same impact degree for both annual and quarterly data. In other words, the impact degrees between annual and quarterly data are substantially different, although 80.9% of the firms have the same impact directions.

IMPACT CORRELATION

The notion that impact degrees are different can be further verified by the Pearson correlation coefficient between annual and quarterly impact ratios. The Pearson correlation coefficient between them is only 0.09805 (with significance =0.1519, df=214). The "no-difference" argument finds no support from this statistic.

TABLE 5

Impact Degrees for Annual and Quarterly Data

ANNUAL IMPACT RANGE	QUARTERLY IMPACT RANGE (%) <= -40	-40 -30	-30 -20	-20 -15	-15 -10	-10 -5	-5 0	0	0 5	5 10	10 15	15 20	20 30	30 40	40 50	50 60	60 70	70 80	80 90	90 100	> 100	N/A	SUM
<= -40%	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
(-40%, -30%]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
(-30%, -20%]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
(-20%, -15%]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
(-15%, -10%]	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
(-10%, -5%]	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	3
(-5%, 0%)	.	.	.	.	.	.	1	.	2	.	.	.	.	1	.	.	.	.	.	.	.	2	6
0%	.	.	1	.	.	1	.	37	3	.	.	.	.	.	.	.	.	.	.	.	.	17	59
(0%, 5%]	.	1	.	.	.	.	8	2	13	19	4	1	1	3	.	1	.	.	1	.	.	4	58
(5%, 10%]	.	.	1	.	.	1	6	1	5	10	.	1	2	1	1	.	.	1	.	.	2	1	33
(10%, 15%]	.	1	.	.	2	.	2	.	5	1	1	2	3	2	.	.	.	1	.	.	1	1	22
(15%, 20%]	.	.	.	1	.	.	.	.	.	1	2	.	.	1	1	1	1	2	1	.	1	.	12
(20%, 30%]	.	.	1	.	.	1	.	.	3	3	2	.	1	1	3	.	1	.	1	.	2	1	20
(30%, 40%]	.	.	.	.	1	.	.	.	2	1	.	.	1	.	.	.	.	.	.	.	4	.	9
(40%, 50%]	.	.	.	.	.	.	.	.	1	.	.	1	.	1	.	.	.	.	.	1	1	.	5
(50%, 60%]	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	1	1	.	.	.	.	.	3
(60%, 70%]	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	1	.	2
(70%, 80%]	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
(80%, 90%]	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
(90%, 100%]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
> 100%	1	.	.	.	.	.	.	.	.	.	1	1	.	1	2	.	1	.	.	.	.	1	8
N/A	.	1	.	.	.	.	.	7	1	1	1	1	.	1	.	.	.	.	.	.	3	125	141
T O T A L	1	3	5	2	4	3	19	47	36	36	11	7	8	12	7	3	4	4	3	1	15	154	385

Chapter V

SFAS NO.52 AND VALUE LINE'S QUARTERLY FORECASTS

5.1 VALUE LINE AND COMPETING ANALYSTS

CONTACTS BETWEEN COMPANIES AND ANALYSTS

According to The Conference Board's surveys in 1972 and 1980, most corporate management believe that professional financial analysts have considerable influences on the stock prices. Consequently, keeping good relationships with analysts is an important part of corporate policy. (McGrath & Walsch, 1973; Lees, 1981.) The 1980 Conference Board's survey also concludes that companies maintain contacts with financial analysts in four ways (ranked in the order of importance):

1. Analysts' meetings;
2. Investors' meetings;
3. Press releases; and
4. Personal visits.

In essence, the first three are public. However, the fourth one is still not real "personal" in its nature. Some companies may grant personal visits "to several hundred different financial analysts in the course of a year." (Lees, 1981:25.) Hence, these interviews generally are held on a group basis, though one-to-one conversations are also common. Therefore, the contacts between companies and financial analysts are relatively public.

ASSISTANCES PROVIDED BY COMPANIES TO ANALYSTS

Furthermore, in helping financial analysts to prepare forecasts, companies generally provide background information to them. The assistance consists of following six principal categories:

> "(1) Comments by executives indicating whether or not the analyst's forecast is 'in the ball park';
> (2) An indication of approximate change (percent) in earnings;
> (3) Statement that company is headed for 'another good year' with earnings similar to or somewhat better than those in recent years;
> (4) Nature of factors that are expected to influence earnings, such as sensitivity of earnings per share to price changes of major raw materials;
> (5) Projection of operations expected in next year, such as sales, financing requirements, capital investments;
> (6) Indication of expected movement in general business or economic conditions (GNP, personal income, industrial production) which could have an impact on company operations and earnings."
> (Lees, 1981: 28.)

Apparently, accounting changes that influence earnings (category 4 above) is one piece of information a corporation provides to analysts. The Value Lins's Investment Survey is, apparently, the most widely circulated professional forecasting journal. Therefore, for such an important accounting change as SFAS No.52, it seems unlikely that Value Line is kept from this information while other analysts can get it.

WHY VALUE LINE?

Aside from this benefit, this study uses Value Line's quarterly earnings forecasts to construct explanatory variables for the following additional reasons:

1. Value Line is the only source that provides quarterly forecasts for the years of study (1981-1984). (See Section 6.3, "Market Expectation of Earnings".)
2. Value Line's quarterly/annual forecasts is proven to be a good proxy for market expectation (e.g. Brown and Rozeff, 1978);
3. Finally, but most importantly, Value Line's quarterly description of the company provides important information on whether a company adopted SFAS No.52 or not when it was issued. And thus the basis of its forecasts (under SFAS No.8 or SFAS No.52) can be judged. This special feature of Value Line makes it the only choice of this study.

5.2 TIMING OF THE DISCLOSURE OF ADOPTION DECISION

ATTITUDE DIFFERENCES REVEALED FROM THE WSJ

When to disclose the adoption of SFAS No.52, however, is a matter of corporate policy. It is not uniform from company to company. Some companies even disclosed their decision to adopt SFAS No.52 before the announcement of the Statement on December 15, 1981; For example, before SFAS No.52 was passed, the Bangor Punta Corporation (with fiscal year ended on September 30) disclosed its intention of early adopting the new foreign currency translation rule and delayed its release of annual results:

> "Bangor Punta Corp. delay releasing fiscal year end results while awaiting a possible accounting rule change that could improve its profit. The change would affect many companies.
> Under the proposed rule revision, to be considered by the Financial Accounting Standards Board early next month, Bangor Punta's earnings would be inceased about 49 cents a share, to $6.06 a share, for the fiscal year ended Sept. 30...
> Analysts said companies with fiscal years ended Sep. 30 have good reasons to wait for the ruling before reporting results: Their profit may look better.
> An official at another multinational company with fiscal year ending Sep. 30, who asked not to be identified, said hedging in currency has saved the company major losses, but 'without that, we might have been very interested in delaying our results.'
> Lou L. Robertson, a partner with the accounting firm of Touche Ross & Co., said 'there's every indication' the new rule will be passed.
> The move puts Bangor on an equal footing with companies reporting results for the year ending Dec. 31. They can restate 1981 earnings if the new rule is adopted before year end."
> (WSJ, 11/23/1981: 37-3.)

However, these extreme lovers of SFAS No.52 are not many. Only five companies[5] (5/385=1.3%) in AICPA-600 disclosed the adoption of SFAS No.52 with earnings announcements in the WSJ before the promulgation of the Statement (December 15, 1981). All other companies officially disclose this adoption after the announcement of SFAS No.52. For example, around one week before the year end, Dana Corp. disclosed that its board approved "changing its method of accounting for foreign currency translation" (WSJ, 12/22/1981: 9-4). IBM also announced that it "is adopting a new method of accounting for foreign currency translation" one month before the year end. "We've studied the change and its implication for some time. We decided to just go ahead and adopt it now", although IBM "wasn't required to do so until the first quarter of 1983" according to SFAS No.52:

> "International Business Machines Corp. said it is adopting a method of accounting for foreign-currency translation that will increase fourth quarter and full-year per-share earnings roughly 10%. The company said 1981 results will be restated, also boosting profit about 10%.
> IBM declined to predict earnings, saying the precise impact of the change won't be known until the company reports the results in late January. IBM said 1982 results will be delayed about a week by the switch to the new procedure...
> Harry Edelson, an analyst with First Boston Corp., was surprised IBM decided to switch to FASB 52 now, because under the law the company wasn't required to do so until the first quarter of 1983. But a spokesman for IBM said, 'We've studied the change for some time. We decided to just go ahead and adopt it now.'"
> (WSJ, 12/2/1982: 5-1)

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[5] They are: Bangor Punta Corp. (4Q/81), Pall Corp. (1Q/82), Jewel Cos., Inc. (4Q/81), Rexnord Inc. (4Q/81), and Esmark, Inc. (4Q/81).

Note that IBM increased its fourth-quarter earnings by 20.2% (+\$0.42 /\$2.08) and full-year earnings by 11.3% (+\$0.75 /\$6.64) by switching to SFAS No.52 when earnings were announced on January 24, 1983.

ATTITUDE DIFFERENCES REVEALED FROM VALUE LINE

The differences in attitude about adopting SFAS No.52 can be further manifested from the Value Line's quarterly description of companies. In the same issue of Value Line's Investment Survey on January 29, 1982, Value Line stated that "Revlon has not decided whether or not to restate 1981 results (under SFAS No.52)":

> "Revlon has not decided whether or not to restate 1981 results. Our \$3.70 a share estimate reflects the company's 1981 earnings before adjustments for the new Financial Accounting Standard Board (FASB) rule No.52, which deals with foreign currency translation."
> (VL, 1/29/1982: 817.)

On the other hand, the Gillette Co. "has opted to adjust last year's earnings in line with FASB rule No.52":

> "Gillette will restate 1981 earnings. Share earnings as reported for the first nine months of 1981 were \$2.18. Gillette has opted to adjust last year's earnings in line with Financial Accounting Standards Board (FASB) rule No.52, which deals with foreign currency translation. We estimate that restated share earnings for the first three quarters of 1981 will be \$3.17 and that full-year restated earnings will be \$4.10 a share."
> (VL, 1/29/1982: 811.)

In fact, both Revlon Inc. and Gillette Co. adopted the new rule in the fourth quarter of 1981. This attitude difference among companies not only existed in 1981, but also in 1982. For example, although both Vm. Wright Jr. Co. and CPC International Inc. adopted SFAS No.52 in the first quarter of 1982, the former clearly disclosed its intention to adopt and the latter had not decided when Value Line was published. (VL, 3/15/1982: 1481,1506.)

5.3 VALUE LINE'S FORECAST ON THE ADOPTION

Because most companies did not disclose whether or not to adopt SFAS No.52, Value Line sometimes predicted the adoption for them. Owing to the complexity of foreign operations and insufficiency of this information, Value Line won some and lost many. For example, Value Line predicted the Goodyear Tire and Rubber Co. (4Q/81) that "we expect Goodyear will restate earnings when it announces its year end results," and it was true:

> "We expect Goodyear will restate earnings when it announces it's yearend results. Goodyear's 1981 earnings were severely hurt by so-called foreign currency losses that were reported under old accounting rule, FASB-8. The revised rule, FASB-52, recognizes that majority of such 'losses' are often not realized, and so directs that except in certain circumstances, the gains and losses that result from the translation of the balance sheet into U.S. dollars are to bypass the income statement and be charged directly to equity. At the time we went to press, Goodyear hadn't decided whether it would restated 1981 interim earnings,

> nor had it determined what earnings would have been if they were restated."
> (VL, 1/1/1982: 137.)

However, in many instances, Value Line's predictions were wrong. For example, Value Line predicted that "it is not likely that Air Products would adopt new currency translation rules until fiscal 1983," because "the company's hedging procedures minimizes reported currency gains and losses":

> "European results are poor. Tonnage sales of industrial gasses have held up surprisingly well, but when sales and profits (mainly in pound sterling) are converted into dollars, reported sales and profits suffer. It's not likely that Air Products would adopt new currency translation rules until fiscal 1983. The company's hedging procedures minimizes reported currency gains and losses."
> (VL, 12/18/1981: 1892.)

In fact, the Air Products and Chemicals Inc. adopted SFAS No.52 on the first quarter of 1982. As a result of Statement No.52, Air Products disclosed in its annual report, parallel hedges used in prior years were cancelled:

> "During the first quarter of fiscal year 1982, the company adopted the newly enacted Statement of Financial Accounting Standards No.52, 'Foreign Currency Translation'...
> As a result of adopting the new standard, the company cancelled its parallel hedge program. In prior years, these hedges substantially reduced the impact on earnings caused by translating the balance sheets during periods of fluctuating exchange rates."
> (Air Products and Chemicals, Annual Report, 1982: 22.)

Similar situations happened in the cases of Bristol-Myers Co. (1Q/82), Baxter Travenol Laboratories, Inc. (1Q/82), Schering-Plough Corp. (1Q/82), and Medtronic, Inc. (4Q/82), etc.

5.4 VALUE LINE'S FIRST-TIME FORECASTS UNDER SFAS NO.52

Due to the more "liberal accounting rule" of SFAS No.52 stated in section 1.3, the new promulgation makes earnings of the quarter/year hard to forecast. The main hurdles are the management discretions on the functional currencies and insufficiencies of information for the foreign entities. Making earnings forecasts under SFAS No.52 by just adding back translation gains/losses may cause a "forecast nightmare". Value Line made this fallacy on its forecasts for Texaco (4Q/82). Value Line stated that:

> "More accounting changes are coming. A switch to the FASB 52 method for handling foreign currency translation will let financial reports more closedly reflect operating results. Texaco has yet to decide, though, whether to incorporate the new rules in the 1982 yearend report. Under present bookkeeping (FASB 8), we assume the recently stronger yen would cause a translation loss for the final 1982 quarter. (Nevertheless), FASB 52 would make it a gain instead, but would also swing the 9-month foreign currency gain of 55 cents a share into the loss area."
> (VL, 1/14/1983: 439.)

These forecasts, however, were totally nullified by the management of Texaco. "In the judgment of Texaco's management," Texaco Inc. declared in its annual report of 1982, "the U.S. dollar represents the functional currency for all operations abroad." Therefore, the effect of this accounting change is immaterial:

> "Under the provisions of Statement No.52, the functional currency for each company operating abroad is either the U.S. dollar or the local currency. In the judgment of Texaco's management, the U.S. dollar represents the functional currency for all operations abroad because:
> (1) International pricing in the petroleum business is dominated by OPEC crude prices based on U.S. dollars, and
> (2) there exists an extensive interrelationship between the operations of the Company's foreign entities and the parent company because of the high level of intercompany transactions, which are generally denominated in U.S. dollars."
> (Texaco Annual Report, 1982: 32.)

In fact, forecasting functional currencies is not easy. Similar firms in the same industry do not guarantee to have the same functional currencies. For example, Exxon Corp. and Texaco Inc. are two oil giants and both adopted SFAS No.52 in the fourth quarter of 1982. While the third oil giant, Texaco, determined that the U.S. dollar represented the only functional currency for all its foreign operations, the biggest oil giant, Exxon, did the reverse. Exxon stated that:

> "FAS-52 was implemented by using the local currency of the country of operation as the 'functional currency' for translating the accounts of the majority of foreign operation. These operations include essentially all foreign petroleum refining and marketing as well as chemical operations, except for those located in highly inflationary economies; also included are exploration and production operations where the production is con-

> sumed locally, such as in Australia, Canada, the United Kingdom and continental Europe. For other foreign operations, principally exploration and production operations in Norway, Malaysia and the Middle East, together with operations in highly inflationary economies, the U.S. dollar is used as the functional currency."
> (Exxon Annual Report, 1982: 25-26.)

The reasons that made Texaco determine to use the U.S. dollar as the only functional currency existed, to some extent, for Exxon also. However, these two oil giants did it differently. Unless management discloses its decisions on the functional currencies, it is very difficult to predict them, especially for the quarter of change.

5.5 FORECAST OF FUNCTIONAL CURRENCIES IN SUBSEQUENT PERIODS

To predict the functional currencies for the quarter of adopting SFAS No.52 is not easy. Stepping further to forecast the changes of functional currencies in the subsequent periods is even harder. According to SFAS No.52, the determinants of functional currencies are, MICRO-ECONOMICALLY, cash flows, sales prices, sales markets, expenses, financing, intercompany transactions, and, MACRO-ECONOMICALLY, local inflation. (SFAS No.52, para. 42, 11). Both micro and macro indicators are changing with time. Therefore, SFAS No.52 allows functional currencies to be changed when management justifies:[6]

> "45. Once a determination of the functional currency is made, that decision shall be consistently used for each foreign entity unless significant changes in economic facts and circumstances indicate clearly that the functional currency has changes...
> 46. If the functional currency changes from a foreign currency to the reporting currency, translation adjustments for prior periods should not be removed from equity and the translated amounts for nonmonetary assets at the end of the prior period become the accounting basis for those assets in the period of the change and subsequent periods. If the functional currency changes from the reporting currency to a foreign currency, the adjustment attributable to current-rate translation of nonmonetary assets as of the date of the change should be reported in the cumulative translation adjustments component of equity."
> (SFAS No.52, para. 45 and 46.)

Since the six micro-economical indicators are not in public generally, forecasting the change of functional currencies is very difficult in practice. Even for the most accessible macro-economical indicator change that leads to the alternation of functional currency, no forecast about that has been made in the Value Line. For example, Mexican Peso devaluated from 34.34 Peso/U.S. dollar to 73.32 Peso/U.S. dollar in 1982. (See Table 6.) Acme-Cleveland Corp. (1Q/82), therefore, changed its Mexican subsidiaries' functional currency from Peso to U.S. dollar in the quarter of

[6] However, the change of functional currency is not a change in accounting principle. APB Opinion No.20, "Accounting Changes," paragraph 8, stated that "adopting or modification of an accounting principle necessitated by transactions or events that are clearly different in substance from those previously occuring" is not a change in accounting principles. (SFAS No.52, para. 45.)

June 30, 1982:

> "Note C -- Foreign Currency Translation
> The Financial statements of foreign entities for the nine months end June 30, 1982, have been translated into U.S. dollars in accordance with FASB Statement No.52, "Foreign Currency Translation"... The New method of accounting increased net earnings for the first nine months for fiscal 1982 by $461,200 ($.10 per share), principally due to changes in conversion rate of Mexican peso. For the third fiscal quarter, the functional currency for Mexican operations was changed from the peso to the U.S. dollar."
> (Acme-Cleveland Corporation's 10-Q, 6/30/1982: 5.)

In the subsequent quarter, Ampco-Pittsburgh Corp. (1Q/82), Cooper Industries, Inc. (1Q/82), and General Signal Corp. (1Q/82) also made the same change. (See 10-Q's for respective companies.) For example, Ampco-Pittsburgh Corp. stated in its third quarter report that:

> "Note 1 -- Accounting Change
> During the first quarter of 1982, the Corporation adopted Statement of Financial Accounting Standards No.52 "Foreign Currency Translation," which excludes from the determination of net income those fluctuations that occur due to the translation of foreign financial statements into U.S. dollar... The cumulative translation adjustment of $4,156,000 reflected in shareholders' equity at September 30, 1982 is comprised of $266,000 attributable to cumulative translation adjustments as at January 1, 1982 and $3,890,000 attributable to subsequent translation adjustments due to principally to our Mexican subsidiary.
> The Statement requires that the financial statements of a foreign entity in a highly inflationary economy be remeasured using the reporting currency (the U.S. dollar) as the functional currency. Accordingly, effective July 1, 1982, our Mexican operations have been remeasured following the devaluation of the Mexican peso and the recognition that the currency is highly inflationary under the definition of the Statement."
> (Ampco-Pittsburgh Corp's 10-Q, Third Quarter, 9/30/1982: 6.)

Nevertheless, no indication of this change can be detected from Value Line's forecasts for these companies. As for functional currency switches resulting from the changes of micro-economical indicators, the difficulties in forecasting them is imaginable.

TABLE 6

Exchange Rates for Major Currencies during 1981-1984

Currency	1981 1Q	1981 2Q	1981 3Q	1981 4Q	1982 1Q	1982 2Q	1982 3Q	1982 4Q	1983 1Q	1983 2Q	1983 3Q	1983 4Q	1984 1Q	1984 2Q	1984 3Q	1984 4Q
SDR* /US$	0.804	0.846	0.882	0.861	0.879	0.895	0.920	0.928	0.915	0.927	0.948	0.950	0.953	0.956	0.988	1.005
Change(%)	(3.5)	(5.1)	(4.2)	(-2.3)	(2.1)	(1.7)	(2.8)	(0.8)	(-1.3)	(1.3)	(2.2)	(2.2)	(0.3)	(0.3)	(3.4)	(1.8)
Deutsch Mark/US$	2.086	2.275	2.432	2.244	2.345	2.378	2.481	2.501	2.407	2.484	2.642	2.677	2.702	2.709	2.918	3.052
French Franc/US$	4.859	5.485	5.808	5.651	5.994	6.279	6.941	7.073	6.887	7.470	7.960	8.167	8.305	8.331	8.960	9.362
Japan Yen/US$	205.5	220.0	231.9	224.0	233.4	244.2	258.8	259.6	235.7	237.5	242.5	234.2	231.0	229.6	243.4	246.0
UK Pound/US$	2.310	2.081	1.836	1.883	1.847	1.779	1.725	1.649	1.532	1.555	1.510	1.472	1.434	1.396	1.297	1.216
Canada $/US$	1.193	1.198	1.211	1.191	1.208	1.244	1.249	1.249	1.227	1.231	1.232	1.238	1.255	1.292	1.313	1.318
Australia $/US$	0.855	0.873	0.874	0.876	0.920	0.954	1.016	1.051	1.058	1.143	1.135	1.098	1.074	1.106	1.193	1.182
Mexico Peso/US$	23.4	24.0	24.7	25.6	34.3	46.7	71.1	73.3	102.0	114.2	126.1	138.0	149.9	161.8	173.7	185.7
Brazil Cruz./US$	70	83	99	118	137	160	189	230	326	475	638	867	1140	1514	2004	2732
Argent. Peso/US$	0.2	0.3	0.5	0.6	1.0	1.3	3.7	4.2	5.7	7.8	10.7	17.8	27.8	41.1	69.3	132.2

* Special Drawing Right (SDR): Beginning January 1, 1981, the SDR valuation basket consists of the currencies of the five members having the largest exports of goods and services during the period 1975-1979, i. e. U.S. Dollar, Deutsche Mark, French Franc, Japanese Yen, and Pound Sterling.

(Source: International Financial Statistics, IMF, April, 1985.)

Chapter VI

NEW-INFORMATION-DE-FACTO AND EXPLANATORY VARIABLES

6.1 THE IMPORTANCE OF QUARTERLY DATA IN ACCOUNTING CHANGE STUDIES

As Lev and Ohlson (1982:308) noticed, employing the stock price CHANGE APPROACH in information content studies "depends crucially on the expectational model used, and on an exact identification of the timing of information disclosure." The timing problem needs a detailed discussion here.

It is true that the exact identification of the timing of informational disclosure is critical to the Change Approach in information content studies. APB Opinion No.28 requires "each report of interim financial information should indicate any changes in accounting principles or practices" (para. .23), and similar disclosure requirements for accounting changes in interim reports as in the annual report (para. .25). If an accounting change happened in the first, second, or third quarter, studying its market reaction on the fiscal year end is apparently not a powerful research design. Using interim reports' information in accounting change studies is useful in this aspect, because it approximates the correct timing of the change.

However, when the accounting changes happen in the fourth quarter, where the fourth-quarter earnings are incorporated into the annual report (no separate fourth-quarter interim report is required by the SEC or Exchanges), an important question is which data should be used as the basis of analyses theoretically --- annual data, quarterly data, or a combination of both? and how?

THE CRITERION

It is generally accepted that the market reacts to "new information" only. The market will not react to "old information" that has been reacted to in previous periods. The key to the above question becomes "what new information is provided when the earnings news are released?" Before annual income was disclosed, three interim reports had been announced. Therefore, for the earnings information per se, only the fourth-quarter income conveys real new information to investors when annual income is announced. Therefore, the market will react to this piece of new information. In a SIMPLE SCENARIO where no accounting change happens in the fourth quarter, using a formulation of fourth-quarter signal is apparently a better choice for analyses. This notion was supported by the empirical study conducted by Hagerman, Zmijewski, and Shah:

> "These results suggest the studies attempting to examine or control for earnings signal around the annual report data should focus on the fourth-quarter information signal, rather than use a formulation of an annual signal."
> (HZS, 1984: 538.)

6.2 NEW INFORMATION DE FACTO

Return to the COMPLEX SCENARIO where accounting change happens in the fourth quarter. If a company early adopted SFAS No.52 in the fourth quarter of 1981, it was required to disclose annual earnings under the new rule, the annual impact of this accounting change, and four restated quarterly earnings for previous quarters. According to the mechanism discussed in Chapter III, the "new information de facto" that the market will react to are:

1. The fourth-quarter earnings under the old rule of SFAS No.8,
2. The fourth-quarter income impact of adopting the new rule of SFAS No.52, and
3. The income impact of this adoption for the previous three quarters.

A simplified diagram to illustrate this theory is shown in Figure 2.

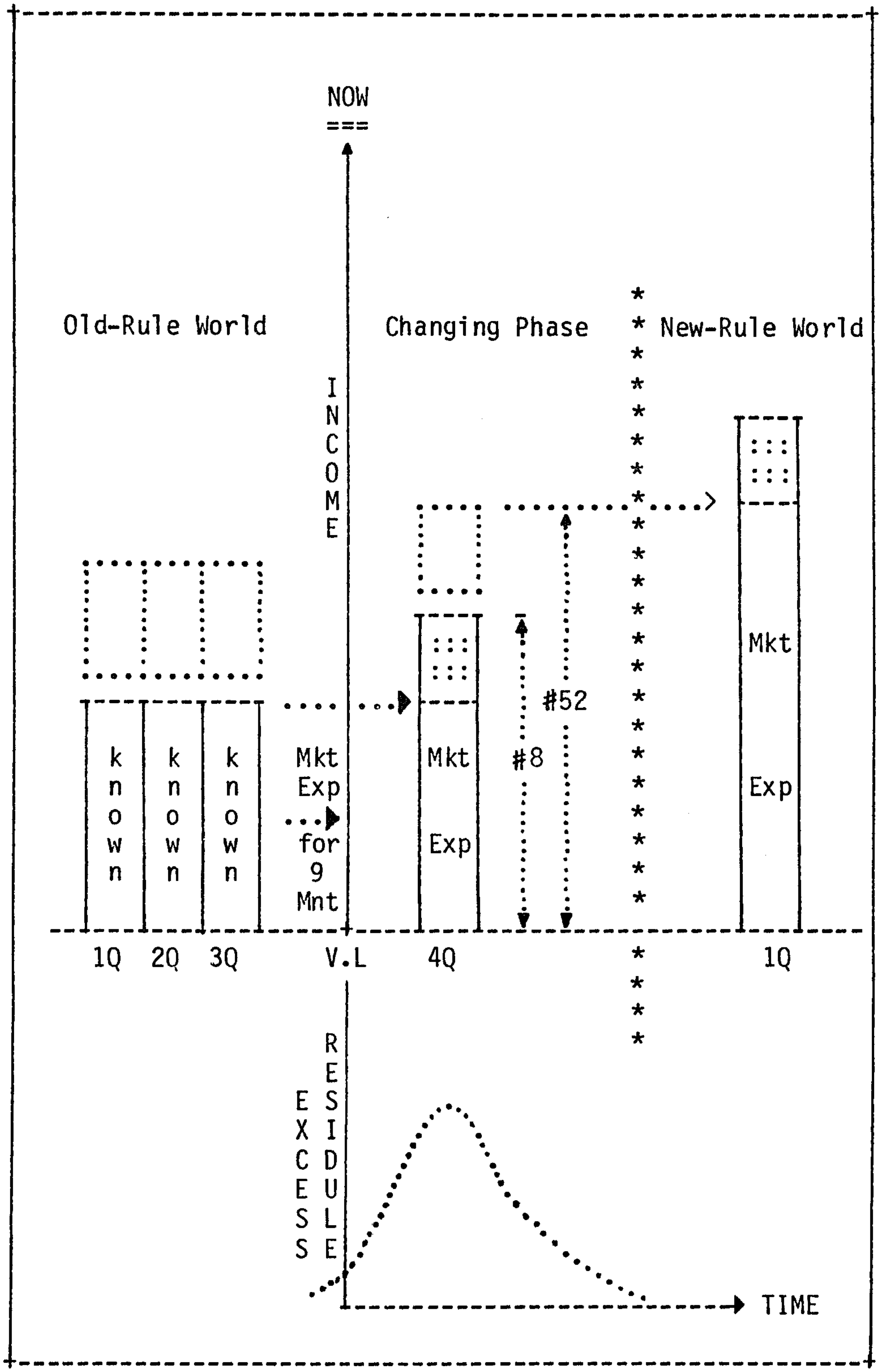

Figure 2: Theoretical Framework of This Study

Notice that this study combines three previous quarters' impact as one new information source. In fact, we can identify the income impact of adoption for each quarter. However, because of the cumulative characteristics of income figures, investors generally are more concerned about the cumulative income as time has passed. For example, the WSJ reported Xerox's adoption effect as follows:

> "The new foreign currency treatment reduced earnings in the first nine months of 1981 by six cents from the previously reported $5.81 a share, but added 37 cents a share in the fourth quarter." (WSJ, 1/29/1982: 40-1.)

For the same reason, GAAP and the SEC also require interim income statements to disclose the cumulative income from the beginning of the fiscal year to the quarter that the inteeerim report is issued, in addition to disclosing the income for that specific quarter.

6.3 MARKET EXPECTATION OF EARNINGS

To test the causality that "unexpected change in earnings results in unexpected change in stock prices", we need to construct these two unexpected changes. The construction of unexpected change in stock prices will be discussed in the next chapter. (Chapter VII, "Dependent Variable".) The construction of unexpected change in earnings is discussed here.

Before constructing unexpected change in earnings, one must know what the market expected. In our complex scenario where a company adopted SFAS No.52 in the fourth quarter, two market expectations must be identified:

(1) Market Expectation for the Fourth-Quarter Earnings

Previous studies used forecasts from various forecast models, such as naive model, submartingale, Box-Jenkins models, or index models, as surrogates of market expectation of earnings. However, recent research shows that financial analysts' forecasts (hereafter FAF) is the best surrogate for market expectation of earnings. (e.g. Bernhard, 1975; Brown and Rozeff, 1978; Fried and Givoly, 1982). These findings are in accordance with the rationality in the market for forecasts and the long-run equilibrium employment of analysts.[7] Therefore, this study will use FAF as the surrogate for the market expectation of earnings for the fourth-quarter earnings in our study.

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7 Since security analysts process substantially more information than the time series of past earnings, their earnings forecasts should be superior to time series forecasts. The demand of earnings forecasts in the market and the wide circulation of the conveying media make FAF be better measures of market earnings expectation. The continued employment of analysts by profit-maximizing firms fully reflects this reality.

At present, four sources of analysts' forecast of earnings are available:

1. The Value Line's Investment Survey;
2. The Earnings Forecaster of Standard and Poor;
3. IBES Service of Lynch, Jones and Ryne; and
4. ICARUS Service of Zacks Investment Research Inc.

Of these four sources, only Value Line provides quarterly EPS forecasts for the years of study (1981-1984). Among the three composite forecasters, ICARUS Service started providing quarterly data from 1983; IBES from 1984; and Earnings Forecaster does not provide quarterly forecasts. Besides, the Value Line's Investment Survey is the most widely circulated among the four. (Sources three and four are private and very hard to access.) And, the Brown and Rozeff's study used Value Line's Investment Survey as their FAF source and discovered its superiority as the surrogate of the market expectation for quarterly earnings. Therefore, this study uses Value Line as the surrogate of the market expectation for quarterly earnings.

(2) Market Expectation for Previous Three Quarters' Earnings

Before annual income was released, three interim reports already had been issued. The earnings for the previous nine months had been disclosed in the third quarter interim report. Obviously, the market would expect the previous nine-month earnings to be the sum of the previous tnree quarterly incomes under SFAS No.8 when annual income was disclosed.

6.4 THE CONSTRUCTION OF EXPLANATORY VARIABLES

Assume the accounting change happens in the k-th quarter, three explanatory variables must be constructed based on the above reasoning:

(1) Adjusted Unexpected Error for the k-th quarter (AUE_{KQ})

$$AUE_{KQ} = \frac{Actual^{8}_{KQ} - FAF^{8}_{KQ}}{|FAF^{8}_{KQ}|} \quad \text{......(Eq. 6-1)}$$

where,

k = k-th quarter in which an accounting change happens.

$Actual^{8}_{KQ}$ = actual k-th quarter EPS under SFAS No.8;

FAF^{8}_{KQ} = financial analyst's forecast on the k-th quarter EPS.

(2) Current Adoption Impact for the k-th quarter (CAI_{KQ})

$$CAI_{KQ} = \frac{Actual^{52}_{KQ} - Actual^{8}_{KQ}}{|FAF^{8}_{KQ}|} \quad \text{......(Eq. 6-2)}$$

where,

k = k-th quarter in which an accounting change happens.

$Actual^{52}_{kQ}$ = actual k-th quarter EPS under SFAS No.52;
$Actual^{8}_{kQ}$ = actual k-th quarter EPS under SFAS No.8 ;
FAF^{8}_{kQ} = financial analyst's forecast on the k-th quarter EPS.

(3) Prior Adoption Impact for previous quarters (PAI_{kQ})

$$PAI_{kQ} = \frac{\sum_{i=1}^{k-1} (ACTUAL^{52}_{iQ} - ACTUAL^{8}_{iQ})}{\left|\sum_{i=1}^{k-1} ACTUAL^{8}_{iQ}\right|} \quad \text{......(Eq. 6-3)}$$

where,
k = k-th quarter in which an accounting change
$ACTUAL^{52}_{iQ}$ = actual i-th quarter net income under SFAS No. 52.
$ACTUAL^{8}_{iQ}$ = actual i-th quarter net income under SFAS No. 8.

Notice that AUE, CAI, and PAI are the three sources of NEW-INFORMATION-DE-FACTO to investors in the case of an accounting change. The whole construct for the analyses thereafter is based on these three explanatory variables. Of course, a composite variable (RUE_{kQ}) can be constructed similarly:

(4) Reported Unexpected Error for the k-th quarter (RUE_{kQ})

$$RUE_{kQ} = \frac{Actual^{52}_{kQ} - FAF^{8}_{kQ}}{\left|FAF^{8}_{kQ}\right|} \quad \text{......(Eq. 6-4)}$$

where,
k = k-th quarter in which an accounting change happens.
$Actual^{52}_{kQ}$ = actual k-th quarter EPS under SFAS No.52;
FAF^{8}_{kQ} = financial analyst's forecast on the k-th quarter EPS.

Notice that $RUE_{KQ} = AUE_{KQ} + CAI_{KQ}$ ......(Eq. 6-5)

As discussed in Chapter III ("BASIS OF HYPOTHESIS"), the income impact of adopting SFAS No.52 is a signal of possible changes in hedging activity. Therefore, the sign of this signal will be irrelevant to the market reaction to the adoption. Furthermore, since the CAI is the adoption impact to the current period accompanying with the current earnings signal, AUE, its signalling strength is expected to be stronger than that for the previous period, PAI. CAI is the primary signal for changes in hedges; PAI is only a secondary signal.

Although the New-Information-de-Facto Approach developed in this study is expressed in the fourth-quarter accounting change, it applies to accounting changes happening in any quarter. For example, if the accounting change happens in the third quarter, PAI will be constructed from the previous two quarters. AUE_{KQ}, CAI_{KQ}, and RUE_{KQ} are constructed in a similar manner as those in the fourth quarter. When accounting change happens in the second quarter, PAI is constructed from the previous first quarter. As accounting change happens in the first quarter, PAI is equal to zero.

6.5 DANGER OF MIS-SPECIFICATION

In order to look into the differences between quarterly data (which is proposed in this study) and annual data (which were generally used in previous studies in accounting changes), this study takes the Exxon Corporation (1982) for illustration. (Results from the Vulcan Material Co. are similar also.) Table 7 shows these differences in explanatory variables.

Interestingly enough, for the Exxon Corporation, using quarterly data dramatically changes all the signs and sizes of explanatory variables obtained from using annual data, which were employed in all previous studies! If the reasoning in this chapter is correct, in which this study believes with confidence, using annual data, apparently, mis-specifies the explanatory variables.

TABLE 7

A Comparison between Quarterly and Annual Data

Exxon Corporation (4Q/1982)

Variable	QUARTERLY DATA	ANNUAL DATA
AUE	(1.29-0.82)/0.82 = +57.3%	(4.97-5.90)/5.90 = -15.8%
CAI	0.42 /0.82 = +51.2%	-0.15 /5.90 = -2.5%
PAI	-490/3,195 = -15.3%	N/A
RUE	(1.71-0.82)/0.82 = +108.5%	(4.82-5.90)/5.90 = -18.3%

(Unit: Dollar for EPS; Million dollars for net income.)

Note:

	(Naive = Actual^{8}_{Y-1} = \$6.43)
$^{*}\text{FAF}^{8}_{4Q}$ = \$0.82	$^{*}\text{FAF}^{8}_{Y}$ = \$5.90
Actual^{52}_{4Q} = \$1.71	Actual^{52}_{Y} = \$4.82
Actual^{8}_{4Q} = \$1.29	Actual^{8}_{Y} = \$4.97
Impact_{4Q} = \$0.42	Impact_{Y} = -\$0.15
ACTUAL^{8}_{1Q} = 1,240 (\$1.43)	IMPACT_{1Q} = -401 (-\$0.46)
ACTUAL^{8}_{2Q} = 885 (\$1.02)	IMPACT_{2Q} = -36 (-\$0.04)
ACTUAL^{8}_{3Q} = 1,070 (\$1.23)	IMPACT_{3Q} = -53 (-\$0.06)
** 3,195 (\$3.68)	** -490 (-\$0.56)

* The Value Line earnings forecasts are in EPS.
** If shares outstanding changed in some quarters, EPS will not be added. This study use quarterly earning figures for security.

Chapter VII

THE DEPENDENT VARIABLE

The development in finance theory makes the construction of dependent variable less controversial. For standardizing different stock-price levels of different companies and employing return-generating models, researchers have always used the rate of return, instead of the stock price itself, in the Change Approach.

7.1 CHOICE BETWEEN DAILY RETURNS AND MONTHLY RETURNS

In accounting and finance studies on information content, daily returns (e.g. Hagerman, Zmijewski and Shah, 1984; Morse, 1981), weekly returns (e.g. Haw, Lilien and Pastena, 1985; Watts, 1978), and monthly returns (e.g. Beaver, Clarke, and Wright, 1979; Fama et. al., 1969) have been employed respectively. However, recent studies strongly support using daily returns in information-content studies for increasing the probability of detecting the market reaction to the information.

The superiority of using daily returns to monthly returns in information-content studies is verified in econometric theory (Morse, 1984) and in simulations (Brown and Warner, 1985; Dyckman, Philbrick, and Stephan, 1985). Assuming serial independence of returns, Morse (1984) shows that using daily returns will produce more powerful statistical tests than using monthly returns in econometric theory. This general conclusion is made by considering confounding events, uncertainty about event dates, change of betas and possible specification error in returns-generating models.

Two simulation results using different returns (monthly versus daily) by Brown and Warner (1980, 1985) fully reflect the empirical superiority of using daily returns in information-content studies. Using monthly returns in their simulation, the detection rate of adding 1% returns under a 5% confidence level is only 22.8% (Brown and Warner, 1980). However, using daily returns increases the detection rate to 80.4% (Brown and Warner, 1985). The benefit of using daily returns in information-content studies is obvious.

Dyckman, Philbrick, and Stephan (1985) used different portfolio sizes, different number of days of uncertainty (within 5 trading days), and different magnitudes of abnormal returns in their simulation. They confirm the argument that using daily returns will produce more powerful tests than using monthly data in information-content studies. Table 8 summarizes three simulation results using different returns in literature.

TABLE 8

Simulation Results Comparing Daily with Monthly Returns

(in % of times a t-test rejects the null hypothesis)
--- Market Model (Sample size: 50 securities) ---

5% Confidence Level 1% Added Returns	MONTHLY RETURNS Brown & Warner (1980)	DAILY RETURNS Brown & Warner (1985)	Dyckman et al (1985)
Event date is Certain	22.8	80.4	96
Days of Uncertainty			
2			48
3			29
4			26
5			16
11		13.2	

Source: Brown & Warner (1980: 224; 1985: 14); Morse (1984: 618); and Dyckman et. al. (1985: 13).

7.2 DAILY PRICE REACTION TO QUARTERLY EARNINGS ANNOUNCEMENTS

Previous studies unanimously prove that quarterly earnings announcements convey information content to investors, and the market reaction to this information occurs during a rather brief time span. For example, Kiger (1972) found significant market reaction to the quarterly earnings announcements during three days surrounding the WSJ disclosure date for 87 NYSE-listed firms during 1966-1969.

Using daily returns of 20 NYSE-listed firms, 5 AMEX-listed firms and 25 OTC firms during 1973-1976, Morse (1981) shows that the most significant price changes occur on the day prior to and the day of the WSJ announcement of quarterly earnings. The activity on the day prior to the WSJ announcement could be due to the fact that quarterly or annual earnings are often announced over the Broad Tape on the day prior to the WSJ announcement.

7.3 THE RETURN GENERATING MODEL

CHOICE OF MODELS: SCHOLES & WILLIAMS MODEL

However, since many securities are traded only infrequently, the use of daily data in the market model will cause econometric problems in theory. Assuming returns are normally distributed, it is shown that measured variances of returns overstate true variances, and measured covariances understate true covariances when trading of securities are nonsynchronous. With these errors in variables, the ordinary least squares estimaters of the market model are biased and inconsistent. For very frequently or very infrequently traded securities, betas are biased downward. By contract, for average traded securities, betas are biased upward. (For locating non-trading dates from the CRSP Daily Tapes, see footnote.[8]) Scholes and Williams (1977), therefore, constructed a model that can produce consistent estimaters for nonsynchronous securities ("Scholes-Williams Model"). The consistent estimaters for beta is calculated as a combination of lead, contemporaneous, and lag OLS betas adjusted by market auto-correlation:

$$\hat{R}_{it} = a_i^* + b_i^* \cdot R_{Mt} \quad \text{.........................(Eq. 7-1)}$$

where,

$R_{it} = \ln (1 + r_{it})$;

$r_{it} = (\text{Price}_{it} - \text{Price}_{it-1} + \text{Dividend}_{it}) / \text{Price}_{it-1}$;

$a_i^* = (\sum_{t=2}^{T-1} R_{it})/(T-2) - b_i^* \cdot (\sum_{t=2}^{T-1} R_{Mt})/(T-2)$;

$b_i^* = (b_i^- + b_i + b_i^+)/(1+2p_M)$;

p_M = estimated of the first-order auto-correlation of return of returns of the market portfolio;

b_i^- = OLS estimate of b when regressing R_{it} on R_{Mt-1} ;

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[8] A TECHNOLOGICAL NOTE:
In CRSP Daily Tapes, when a price is not available because of no trading, the CRSP Master file includes an average of the bid and asked quotations by identifying it with a negative sign. In such a case, the daily return is calculated using the average of the bid and asked quotation and recorded in the Daily Return File. (CRSP Users' Guide, 1986:11.) Only when no quotation is made, the Daily Return File treated it as a missing value of -1. Therefore, it is not appropriate to locate the non-trading dates through CRSP Daily Return File. A combined usage of CRSP Daily Return File and Daily Master File is necessary for precisely locating the non-trading dates.

b_i = OLS estimate of b when regressing R_{it} on R_{Mt};

b_i^{+} = OLS estimate of b when regressing R_{it} on R_{Mt+1}.

This study employs the Sholes-Williams Model to generate security returns, $\hat{R}_{it}$. The abnormal return on a specific date, then, is:

$$u_{it} = R_{it} - \hat{R}_{it} \quad \text{..............................(Eq. 7-2)}$$

The Cumulative Abnormal Returns ("CAR")[9] for an accumulation period t is defined by:

$$CAR = \sum_{i} u_{it} \quad \text{..................................(Eq. 7-3)}$$

CHOICE OF RETURNS: LOGARITHMIC RETURNS

Two kinds of security returns have been used in capital asset pricing models : (1) logarithmic returns and (2) proportional returns. Theories are generally in favor of linear logarithmic model for asset pricing. First, proportional returns on stocks can never be normally distributed. Given limit liability for an investor, the largest negative

[9] The abbreviation of CAR (Cumulative Abnormal Returns) is different from that used in original work of Fama-Fisher-Jensen-Roll (1969), where CAR stands for Cumulative Average Residuals in the Pattern Approach. Since abbreviating Cumulative Abnormal Returns as CAR is widely accepted in accounting literature, this study follows this convention.

proportional returns is -100%. And empirically, Fama (1965) found that the daily proportional returns of NYSE stocks were distributed symmetrically but with "fat tails". However, the distribution of logarithmic returns are not only symmetric, but also close to normal distribution. According to Merton (1973), the theoretical intertemporal CAPM is based on the normality assumption. And the tests of pricing models are best for normally distributed error terms. Therefore, this study employs the logarithmic returns in Sholes and Williams model.

An additional benefit of the linear logarithmic model is its additivity and consistency in multiperiods. As Rosenberg and Marathe (1979) showed, the linear logarithmic model is completely reserved under compounding. Compounded alpha and residuals are additive from individual alphas and residuals (additivity). And beta is not changed under compounding (consistency). The linear proportional model does not have this advantage in theory. Using monthly returns, Hawawini and Vora (1985) also showed that the means of proportional returns are larger than that of logarithmic returns; and variance of the former is also larger than the latter in the up market, though the coefficients of determination of both models are very close.

CHOICE OF MARKET RETURNS: VALUE-WEIGHTED MARKET RETURNS

Furthermore, the genuine definition of "return" is the change in total value of an investment per dollar for some periods. Consequently, the value of a portfolio is calculated by weighting the number of securities invested. Following this notion, a market return, as a "return" per se, should be weighted. Therefore, this study uses weighted market return as the independent variable in SHoles-Williams model.

7.4 ACCUMULATION PERIOD

In studying the market reaction to the quarterly earnings signals, the accumulation period can be extended, theoretically, from this earnings announcement date to prior announcement date if no significant events happened in this period. Empirically, however, researchers are apt to accumulate residuals two or three days around earnings-announcement date to avoid possible contemporaneous events. Nevertheless, both these two extremes are not appropriate for studies of accounting changes. In the case of SFAS No.52 per se, available data show that some companies disclose the decision of adopting the new rule before earnings announcement dates. The Bangor Punta Corp., Dana Corp., and IBM are examples, as discussed earlier in Section 5.2 and 5.3. Unless one is assured that firms disclose the adoption of SFAS

No.52 and quarterly earnings simultaneously, it is improper to accumulate residuals just two or three days around earnings-announcement dates. This study will empirically test this possibility in Section 11.2. On the other hand, it is also not secure to accumulate residuals along the whole quarter by considering possible contemporaneous events. An alternative is using the Value Line's issue date as the starting date of accumulation for the following reasons:

1. 96.4% (349/362) of Value Line's quarterly forecasts are released after the prior earnings announcement.[10] The average period between Value Line's issue dates and the WSJ earnings-announcement dates is 48 days, which is much shorter than 90 days. Using Value Line's issue date, apparently, shortens the accumulation period.
2. Starting accumulating residuals from Value Line's issue date can guarantee the inclusion of the adoption disclosure date for SFAS No.52. Any disclosure of adopting the new rule should be incorporated into the earnings forecast and generally described in the company's quarterly story in the Value Line. Therefore,

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[10] 13 of 362 (3.6%) quarterly forecasts made by Value Line came before the prior earnings announcements. Since earnings announcement is proven to have information content, the accumulation, therefore, starts three days after prior earnings announcement date for this special case. Only 3 companies of final 158 sample are treated in this way. They are Anchor Hocking Corp., Rockwell International Inc., and Gearhart Industries, Inc..

a researcher can easily identify its basis of forecasts and uses forecasts under the old rule to construct the explanatory variables. This special feature is provided by Value Line only, and not by any other forecasters.

3. According to Brown and Rozeff (1978), Value Line's quarterly forecast is a better proxy for market expectation than other models under study. It will increase the validity of conclusions to use forecasted earnings as the building stones of explanatory variables.

4. Value Line is the only data source that provided quarterly earnings forecasts for the years of study, 1981-1984.

Furthermore, studies also showed that revision of earnings forecast has information content. (e.g. Givoly and Lakonishok, 1979; Imhoff, 1984; among others.) Therefore, this study begins to accumulate residuals three days after the Value Line's issue date if it had revised its forecast. If no revision was made, the starting date for accumulation is its issue date. The accumulation ends three days after the earnings announcement date in the WSJ.

Chapter VIII

TESTED MODEL

To test the market reaction to various earning signals, including those from the accounting change, the following straightforward model can be employed:

$$CAR = b_0 + b_1 .(AUE) + b_2 .|CAI| + b_3 .|PAI| \quad .....(Eq. 8\text{-}1)$$

where, CAR =(Eq. 7-3)= Cumulative Abnormal Returns;
AUE =(Eq. 6-1)= Adjusted Unexpected Errors;
CAI =(Eq. 6-2)= Current-Quarter Adoption Impact;
PAI =(Eq. 6-3)= Prior-Quarters Adoption Impact.

DOMINATION OF LARGE-VARIANCE FIRMS

However, regressing the above model cross-sectionally to examine relationships between cumulative abnormal returns (CAR) and explanatory variables will introduce bias in the estimated coefficients of the latter. The source of this bias comes from the CAR. The variance of abnormal returns is not constant for each company. And it is also cross-sectional dependent. Jain (1982) shows that larger variance firms dominate the portfolio abnormal return. So, the slope coefficients are not distributed with a zero mean. This phenomenon causes problems because the expected value of the slope coefficient under null hypothesis is assumed to be zero. He provides a method explicitly incorporating the cross-sectional dependence among abnormal returns and proves its superiority in obtaining unbiased estimates of the coefficients for the explanatory variables:

$$CAR = b_0 + b_1 \text{(firm specific variable)} + b_4 cov(e_i, T) \quad \text{.....(Eq. 8-2)}$$

where, $cov(e_i, T)$ = covariance between residual of firm i and the sum $T = \Sigma e_i$.

DIFFERENT EVENT DATES WITH DIFFERENT ACCUMULATION PERIODS

When event dates are spread out in calendar time, the assumption of independence of abnormal returns would be satisfactory. In this case, the Jain's model becomes:

$$CAR = b_0 + b_1 \text{(firm specific variable)} + b_4 s^2 (e_i) \quad \text{.....(Eq. 8-3)}$$

where, $s^2 (e_i)$ = variance of residuals.

However, the Jain's model assumes that the accumulation period is identical for each company. In the case of this study, the firm's accumulation periods vary. The length of accumulation period in this study is a function of both Value Line issue date and earnings-announcement date in the WSJ. Since

$$s^2 (t.e_i) = t^2 .s^2 (e_i) \quad \text{........................(Eq. 8-4)}$$

Therefore, the tested model of this study is:

$$CAR = b_0 + b_1 .(AUE) + b_2 . |CAI| + b_3 . |PAI| + b_4 .t^2 s^2 (e_i) \quad .....(Eq. 8-5)$$

where, t = accumulation days;
CAR =(Eq. 7-3)= Cumulative Abnormal Returns;
AUE =(Eq. 6-1)= Adjusted Unexpected Errors;
CAI =(Eq. 6-2)= Current-Quarter Adoption Impact;
PAI =(Eq. 6-3)= Prior-Quarters Adoption Impact.

Chapter IX

DATA PROFILE OF THE AICPA-600 MULTINATIONALS

9.1 TIMING OF ADOPTING SFAS NO.52

This study uses the AICPA-600 companies in the Accounting Trends and Techniques as the subpopulation. The wider selection in the size of industrial firms makes the AICPA-600 a better subpopulation than the Fortune-500. Fortune-500 contains only the biggest firms in the NYSE and includes many financial companies. On the contrary, AICPA-600 does not include financial firms. It only takes industrial samples from NYSE (80%), AMEX (10%), and OTC (10%). Since financial companies have many different accounting attributes from those of industrials, taking AICPA-600 as the subpopulation would be a better research strategy.

ADOPTION YEARS

Among the AICPA-600, 385 companies have foreign operations. These 385 multinationals can be segregated into four groups according to the fiscal year in which they adopted the SFAS No.52:

1. 144 firms are 1981 adopters;
2. 165 firms are 1982 adopters;
3. 64 firms are 1983 adopters; and
4. 12 firms are 1984 adopters.''

Notice that SFAS No.52 is effective for companies with fiscal years beginning on or after December 15, 1982. (SFAS No.52, para. 33.) All 1981/1982 adopters and some 1983 adopter with fiscal year ends beginning before December 15, 1982 are early adopters. So at least about 80% (309/385) adopters of SFAS No.52 are early adopters. (Actual number of early adopters will be discussed in the following paragraphs.) The popularity of SFAS No.52 is very obvious.

ADOPTION YEARS AND QUARTERS

On the other hand, accounting changes may occur in ANY quarter of the year. The 385 multinationals in AICPA-600 also can be classified into four categories according to the quarter they adopted the SFAS No.52:

'' Generally, the fiscal year of AICPA-600 cuts off around calendar January 31:

Fiscal year 1981 = 2/27/81 - 1/31/82;
1982 = 2/26/82 - 2/ 3/83;
1983 = 2/25/83 - 2/ 2/84; and
1984 = 2/24/84 - 2/ 2/85.

Among 12 fiscal-1984 adopters, 11 of them have fiscal years end before December 15. The only one having fiscal year ending on December 31 (i.e. Stanadyne, Inc. traded in OTC) adopted the new rule in the third quarter because of starting foreign operation.

1. 150 firms are first-quarter adopters;
2. 20 firms are second-quarter adopters;
3. 16 firms are third-quarter adopters; and,
4. 199 firms are fourth-quarter adopters.

Apparently, most companies adopted SFAS No.52 either in the first quarter or in the fourth quarter. However, this statistic can not explain the reason why a company selects a specific quarter to adopt the new rule. Since SFAS No.52 was announced on December 15, 1981, a reasonable question is "are most fourth-quarter adopters in 1981?" The answer is "yes". See the cross-tabulation of (Adoption year) x (Adoption quarter) in Table 9.

TABLE 9

Adoption Year and Adoption Quarter

ADOPTION FISCAL YEAR	ADOPTION QUARTER				YEAR TOTAL
	1	2	3	4	
1981	0	0	1	143	144
1982	86	19	13	47	165
1983	54	1	1	8	64
1984	10	0	1	1	12
TOTAL	150	20	16	199	385

Table 9 shows that, generally, firms adopted SFAS No.52 in the first quarter, except those in 1981 because of the timing of the announcement of the new standard. Notice one 1981-adopter adopted SFAS No.52 in the third quarter. It is Jewel Companies, Inc. with its third quarter ending on October 31, 1981. Apparently, Jewel Companies, Inc. waited for the pronouncement of the new standard and adopted it in the third quarter right away. Jewel Companies Inc. made its third quarterly earnings announcement on December 15, 1981, the same date when SFAS No.52 was issued.

ADOPTION YEARS, QUARTERS, AND FISCAL ENDS

Notice also that most of the second-quarter and the third-quarter adopters are in 1982. Are their fiscal-year ends not in December? The answer is "yes". These companies wanted to adopt SFAS No.52 as soon as possible when the new rule was announced so that they adopted it in the second or the third quarter of 1982. See the triple cross-tabulation of (Adoption year) x (Adoption quarter) x (fiscal-year end) in Table 10.

Table 10 shows that 7 of the 19 second-quarter adopters of 1982 adopted SFAS No.52 on or before December 31, 1981 because their fiscal year ended before June. 5 of 19 adopted the new rule on or before March 31, 1982. The remaining

TABLE 10

Adoption Year, Fiscal Year End, and Adoption Quarter

Fiscal		FEB.		MAR.		APR.		MAY.		JUN.		JUL.		AUG.		SEP.		OCT.		NOV.		DEC.		JAN.		TOTAL	
	1Q																.		.				.		.		.
1981	2Q															1	.	3	.			137	.	3	.	144	.
	3Q																.		.				.		1		1
	4Q																1		3				137		2		143
	1Q		.		.		.		.		.		1		1		12		6		3		62		1		86
1982	2Q	4	.	4	.	2	.	3	.	13	7	8	2	6	1	19	2	10	.	3	.	92	7	1	.	165	19
	3Q		1		2		.		.		1		3		.		1		2		.		3		.		13
	4Q		3		2		2		3		5		2		4		4		2		.		20		.		47
	1Q		2		1		2				2		1		.		1		1		.		42		2		54
1983	2Q	3	.	1	.	2	.			3	.	1	.	2	.	5	1	1	.	2	.	42	.	2	.	64	1
	3Q		.		.		.				.		.		.		1		.		.		.		.		1
	4Q		1		.		.				1		.		2		2		.		2		.		.		8
	1Q				2						2		1		2		1		2				.				10
1984	2Q			2	.					2	.	1	.	2	.	1	.	3	.			1	.		.	12	.
	3Q				.						.		.		.		.		.				1		.		1
	4Q				.						.		.		.		.		1				.		.		1
	1Q		2		3		2		.		4		3		3		14		9		3		104		3		150
SUM	2Q	7	.	7	.	4	.	3	.	18	7	10	2	10	1	26	3	17	.	5	.	272	7	6	.	385	20
	3Q		1		2		.		.		1		3		.		2		2		.		4		1		16
	4Q		4		2		2		3		6		2		6		7		6		2		157		2		199

7 companies adopted the new rule on June 30, 1982. In respect of the third-quarter adopters, of 1982, 3 of the 13 adopted SFAS No.52 on or before December 31, 1981 because their fiscal years ended before March. One adopted the new rule on March 31, 1982; 3 in April, 1 in June, 2 in July, and 3 in September of 1982. Notice also that two thirds (62/92) fiscal-December adopters of 1982 adopted SFAS No.52 in the first quarter. They compose the majority of calendar-March-1982 adopters (62/67). (Refer to Table 11.) Notice that 70.6% (272/385) multinationals have fiscal end in December; 6.8% (26/385) in September; and 4.7% (18/385) in June. The remainders are distributed among the other months.

CALENDAR TIMING OF ADOPTING SFAS NO.52

After being adjusted the differences in fiscal year ends, the actual timing of adopting SFAS No.52 is as Table 11 shows. As shown in Table 11, December 1981 (158), March 1982 (67), March 1983 (43), December 1982 (21), and June 1982 (15) are the five most popular months of adopting SFAS No.52. In fact, 64.9% multinationals adopted the new rule within one quarter after SFAS No.52 was announced. Before the starting date the promulgation was effective (December 1982), 82.6% multinationals already adopted it. The popularity of SFAS No.52 is fully reflected in these statistics.

TABLE 11

Adoption of SFAS No.52 in Quarter End of Adoption

Q End	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1981	.	.	.	.	.	.	.	.	1	5	2	158	166
(Cum. %)									(0.3)	(1.6)	(2.1)	(43.1)	(43.1)
1982	10	7	67	6	4	15	6	4	9	3	.	21	152
(Cum. %)	(45.7)	(47.5)	(64.9)	(66.5)	(67.5)	(71.4)	(73.0)	(74.0)	(76.4)	(77.1)		(82.6)	(39.5)
1983	1	1	43	2	.	4	.	2	4	1	4	1	63
(Cum. %)	(82.9)	(83.1)	(94.3)	(94.8)		(95.8)		(96.4)	(97.4)	(97.7)	(98.7)	(99.0)	(16.4)
1984	2	.	.	.	.	.	.	.	1	1	.	.	4
(Cum. %)	(99.5)								(99.7)	(100)			(1.0)

9.2 ADOPTING QUARTER IS THE ONLY VALID CRITERION

All previous studies in positive theory use the year as the basis of classifying early/late adopters for various accounting changes. (e.g. Ayres, 1986 on SFAS No.52; Ricks, 1982 on LIFO adoption; Archibald, 1972 on depreciation switch back; among others.) Analyses based on annual data has two potential dangers:

1. Danger of mis-classification (which will be discussed immediatedly), and
2. Danger of mis-specification (which has been described in Section 6.5).

DANGER OF MISCLASSIFICATION

Using annual data will cause mis-classification in general. The seriousness of mis-classification, however, depends on the differences in distribution between annual data and quarterly data. In the case of SFAS No.52, many multinationals adopted the new rule once it was announced. That makes the distribution of adopters highly right-hand skewed. Table 12 shows the distribution of SFAS No.52-adopters in year end of adoption.

Comparing Table 11 with Table 12, one can observe that

TABLE 12

Adoption of SFAS No.52 in Year End of Adoption

Y End	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1981	.	.	.	.	.	.	.	.	1	3	.	137	141
(Cum. %)									(0.3)	(1.0)		(36.6)	(36.6)
1982	3	4	4	2	3	13	8	6	19	10	3	92	167
(Cum. %)	(37.4)	(38.4)	(39.5)	(40.0)	(40.8)	(44.2)	(46.2)	(47.8)	(52.7)	(55.3)	(56.1)	(80.0)	(43.4)
1983	1	3	1	2	.	3	1	1	5	1	2	42	63
(Cum. %)	(80.3)	(81.0)	(81.3)	(81.6)		(82.6)	(82.9)	(83.4)	(84.7)	(84.9)	(85.5)	(96.4)	(16.4)
1984	2	.	2	.	.	2	1	2	1	3	.	1	14
(Cum. %)	(96.9)		(97.4)			(97.9)	(98.2)	(98.7)	(99.0)	(99.7)		(100)	(3.6)

1. Part of calendar December-1981 adopters are 1982 fiscal-year adopters with non-December fiscal year ends;
2. Most (62/67=92.53%) calendar March-1982 adopters are 1982 December- fiscal-year first quarter adopters. That makes calendar March 1982 a big jump in the distribution of adoption quarter end.
3. The jump on calendar March 1983 are from the first quarter adopters of 1983 with fiscal year end in December.

Figure 3 illustrates the comparative distributions between adoption quarter end and adoption year end. These observations are easily identified from this figure.

Therefore, a study classifying early/late adopters based on the year 1981 (as Ayres, 1986 did) will substantially mis-classify its sample. For SFAS No.52 per se, around 30% of the early adopters will be erroneously classified as late adopters when using fiscal-year ends as cut-off dates, as Table 13 shows.

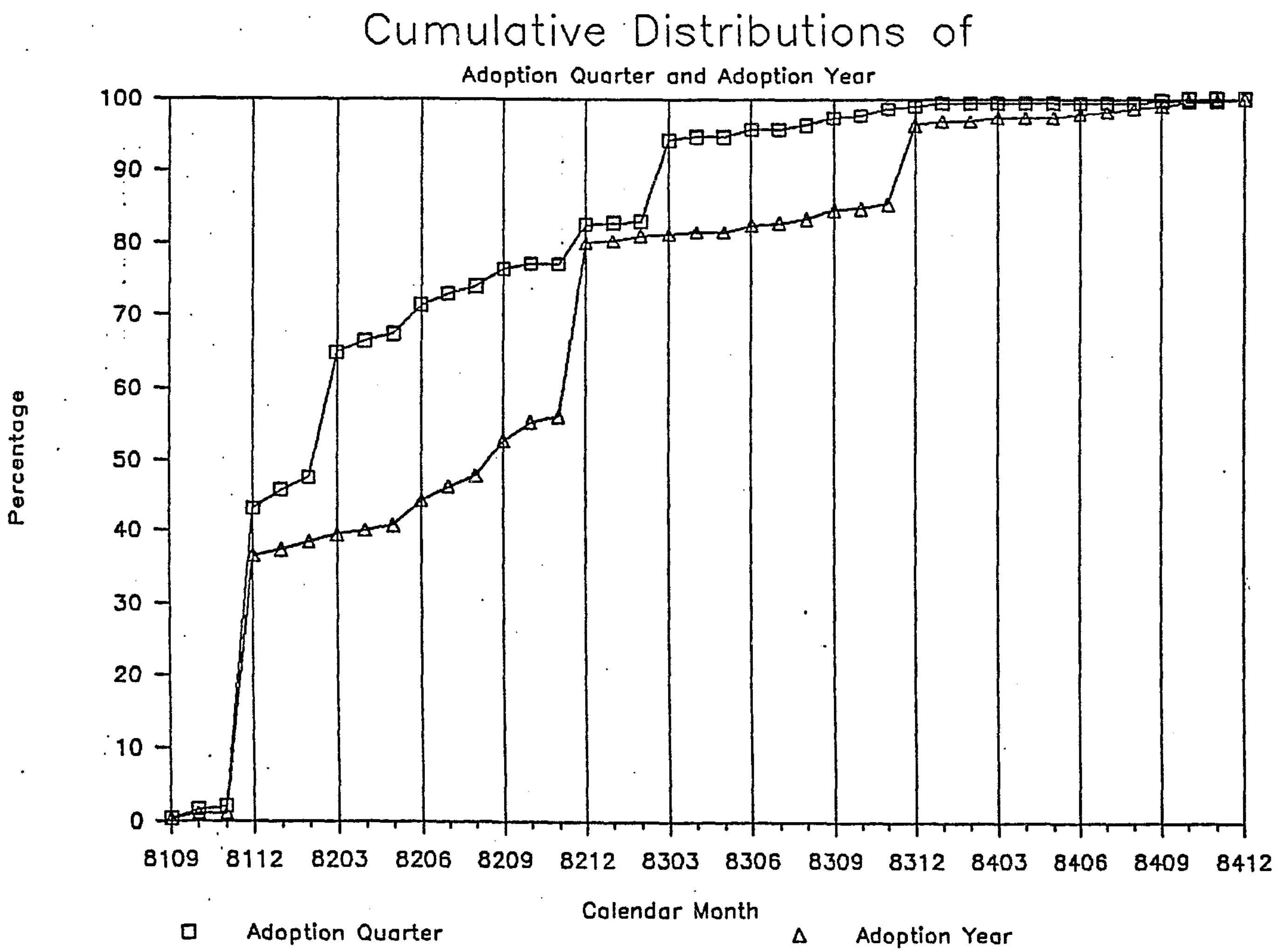

Figure 3: Comparative Distributions between Adoption Quarter and Year

TABLE 13

Error Rates in Using Fiscal Year as Classification basis

Cutoff Date Fiscal Year	EARLY ADOPTERS * Valid A	Invalid B	Error % B/(A+B)	LATE ADOPTERS * Valid C	Invalid D	Error % D/(C+D)
Y 811231	141	25	15.1%	219	0	0.0%
Y 820331	151	95	38.6%	139	0	0.0%
Y 820630	170	104	38.0%	111	0	0.0%
Y 820930	202	92	31.3%	91	0	0.0%
Y 821231	308	10	3.2%	67	0	0.0%

* Valid early-late classification is based on the quarter end of adopting SFAS No.52.

9.3 MARCH 31, 1982 IS THE BEST CUT-OFF DATE

Because SFAS No.52 was issued on December 15, 1981, many companies might want to adopt the new rule early but may not be able to do so because of time constraint. As Blue-Bell Inc. stated:

> "Due to the timing of the issuance of the Statement (No.52), application of the new rule was not possible for the December quarter. However, Statement No.52 will be adopted for the quarter ending March 1982. And accordingly, first quarter results will be restated at that time."
> (Blue-Bell Inc., 10-Q, 12/31/1981: 4.)

Since 84 firms (21.8% of 385) adopted SFAS No.52 within one quarter after it was announced, as Blue-Bell did, it seems inappropriate to classify these companies as late adopters. This idea can be proven statistically. For example, it is generally believed that companies early adopting the new rule could improve their earnings. Taking the earnings improvement as a test variable, and conducting t-tests for different cut-off dates can lead to the location of the best one. Table 14 are the t-test results by taking quarterly earnings improvements as the test variable.

TABLE 14

Locating the Optimal Classification Date

ADOPTION Quarter End	EARLY Mean	EARLY (N1)	LATE Mean	LATE (N2)	t-Value	Sig.
Q 811231	0.4774	(150)	0.1962	(68)	1.8307	0.0687
Q 820331	0.4536	(170)	0.1635	(48)	2.0725	0.0394 v
Q 820630	0.4321	(181)	0.1821	(37)	1.7736	0.0777
Q 820930	0.4164	(192)	0.1927	(26)	1.4512	0.1499
Q 821231	0.3934	(207)	0.3200	(11)	0.2767	0.7860

* Test Variable: $QIMP=(QNI^{52}_{KQ} - QNI^{8}_{KQ})/ |QNI^{8}_{KQ}|$

Obviously, Adoption quarter end of March 31, 1982 can best differentiate between the early and late groups. At this cut-off date, the significance is 0.0394, the lowest of all five different dates.

9.4 A TEST OF DISCRIMINATING POWER

Of course, a researcher can also use other hypothesized variables to locate the optimal cut-off date. However, if the t-tests change randomly among different cutoff dates, then this test variable may not have discriminating power. This is a very direct check on the validity of hypothesized variables. For example, one may argue that early adopters of SFAS No.52 will have a significant higher ratio of foreign assets to total assets when compared to the late adopters. The t-tests under five different cut-off dates do not verify this argument, as shown in Table 15.

TABLE 15

Does Foreign Asset Ratio have Discriminating Power?

ADOPTION Quarter End	EARLY Mean	EARLY (N1)	LATE Mean	LATE (N2)	t-Value	Sig.
Q 811231	0.2762	(141)	0.2621	(173)	0.8429	0.4000
Q 820331	0.2711	(207)	0.2632	(107)	0.4565	0.6483
Q 820630	0.2683	(227)	0.2686	(87)	-0.0153	0.9878
Q 820930	0.2694	(239)	0.2650	(75)	0.2292	0.8189
Q 821231	0.2712	(259)	0.2552	(55)	0.7419	0.4587

* Test Variable: FAR = (Foreign assets)/(Total assets)
** Assets used: For 1Q and 2Q adopters, use last year's data;
For 3Q and 4Q adopters, use this year's data.

From Table 15, it is clear that, on average, the foreign asset ratios for early adopters are not significantly higher than that of later adopters of SFAS No.52. No t-value is significant for all five classifications. And when the classification date is June 30, 1982, the average foreign asset ratios of early adopters is even lower than that of late adopters; that makes the t value negative. Therefore, foreign asset ratio would not be an appropriate discriminating variable for adopters of SFAS No.52. Finding the discriminating variables is not the main purpose of this study, therefore, it is not discussed further here.

Chapter X

RESEARCH DESIGN

10.1 DISCLOSURES OF ADOPTING SFAS NO.52 ON THE WSJ

10.1.1 DIGEST OF CORPORATE EARNINGS REPORT

The dispute of SFAS No.52 not only attracted the attention of academia, but also drew notice from the financial community. The financial press reporters, therefore, paid much attention to the accounting change of foreign currency translation, which is unusual in comparison to most of the other FASB announcements. For example, Peat, Marwick, Mitchell & Co. issued an audit report for Revlon, Inc.'s annual report of 1981 on February 23, 1982. On the next day, February 24, 1982, the WSJ published the following earnings figures for Revlon, inc. in the Section of "Digest of Corporate Earnings Reports" (hereafter "Digest") as Table 16 shows.

Notice that although the Digest did not disclose the income impact of adopting SFAS No.52 on the fourth quarter or on the year, an investor would know the cumulative adoption

TABLE 16

An Example of Clean Disclosure: Digest

--- Revlon Incorporation ---

(Digest of Corporate Earnings Report)

Revlon Corp (NYSE): 4Q/81

Year (Dec 31):	a 1981	1980
Sales	$2,365,938,000	$2,203,334,000
Net income	174,821,000	192,407,000
shr earns (primary):		
Net income	4.10	4.87
Shr earns (fully diluted):		
Net income	4.02	4.75
Quarter (Dec 31):		
Sales	630,326,000	638,830,000
Net income	40,523,000	54,781,000
Shr earns (primary):		
Net income	.94	1.34
Shr earns (fully diluted):		
net income	.93	1.31

a - Reflects adoption of the new accounting change for foreign currency translation.

(Source: The WSJ, 2/24/1982: 24-5)

effect for the previous nine months just from information in the Digest:

$$PAI_{K\ell} = \frac{(\text{Actual}_{Y}^{52} - \text{Actual}_{K\ell}^{52}) - (\sum_{i=1}^{K-1} \text{Actual}_{i\ell}^{8})}{\left|\sum_{i=1}^{K-1} \text{Actual}_{i\ell}^{8}\right|} \quad \text{......(Eq. 6-3')}$$

$$= \frac{(174.821-40.523)-(42.419+50.095+29.904)}{|42.419+50.095+29.904|} = \frac{11.880}{122.418} = 9.7\%$$

From previously-issued interim reports,

$Actual^{8}_{1Q}$ = 42.419 million; $Actual^{8}_{2Q}$ = 50.095 million;
$Actual^{8}_{3Q}$ = 29.904 million.

10.1.2 STAFF REPORT

Aside from providing information in the Digest, the WSJ also issued a special "Staff Report" (hereafter "Report") for popular firms as Revlon. On the same day, February 24, 1982, the WSJ further disclosed the income effect of adopting SFAS No.52 on the year in the "Report" for Revlon:

> "Yesterday, a Revlon spokesman said the higher-than-expected results were due to a change late last year in the rules for accounting for foreign currency translations. Without that change, gully diluted 1981 earnings would have been $3.62 a share, he said."
> (The WSJ, 2/24/1982: 24-3.)

Table 17 shows the staff report for Revlon's earnings announcement. However, not every firm's earnings announcement accompanies a Report. Only about one fourth (104/385=27%) of companies proceed this way. Furthermore, from the example of Revlon, it seems that a firm only having its earnings announced in the Digest might also have disclosed the income effects of adopting SFAS No.52, although the latter did not appear in the WSJ. This study will show this argument empirically. (See Section 11.2, "DISCLOSURE OF ADOPTION DECISION".)

TABLE 17

An Example of Clean Disclosure: Report

--- Revlon Incorporation ---
(Staff Report)

Revlon Profit Fell 26% In the Fourth Quarter And 9.1% in All 1981

By a WALL STREET JOURNAL *Staff Reporter*

NEW YORK—Revlon Inc. said fourth quarter earnings fell 26% from a year earlier and full-year profit declined 9.1%.

The beauty and health-care products company said fourth quarter earnings fell to $40.5 million, or 94 cents a share, from $54.8 million, or $1.34 a share. Sales were $630.3 million, down 1.3% from $638.8 million.

In 1981, Revlon earned $174.8 million, or $4.10 a share, compared with $192.4 million, or $4.87 a share. Sales rose 7.7% to $2.37 billion from $2.28 billion.

On a fully diluted basis, 1981 earnings were equal to $4.02 a share. Last October, Revlon told a meeting of security analysts here that it expected 1981 earnings on a fully diluted basis to be between $3.50 and $3.60 a share.

Yesterday, a Revlon spokesman said the higher-than-projected results were due to a change late last year in the rules for accounting for foreign currency translations. Without that change, fully diluted 1981 earnings would have been $3.62 a share, he said.

(Source: The WSJ, 2/24/1982: 24-3)

10.1.3 OTHER FOOTNOTE DISCLOSURES IN THE DIGEST

Nevertheless, not every company's footnote disclosure in the Digest is so clean as Revlon's. Generally, if a company has significant accounting changes, special events, and extraordinary items that affect income, the WSJ also discloses them in the footnote in the Digest, and/or the Report (if any). For example, the Air Products & Chemicals, Inc. made another accounting change for investment tax credits in the same quarter it adopted the SFAS No.52. Both changes were reflected in the Digest, as Table 18 shows.

TABLE 18

An Example of Mixed Disclosure

--- Air Products & Chemicals, Incorporation ---

(Digest of Corporate Earnings Report)

Air Products & Chem. (NYSE): 1Q/82

Quar (Dec 31):	a 1981	1980
Sales	$373,550,000	$366,411,000
Income	34,562,000	32,257,000
Acctg Adj.	c 61,937,000	
Net Income	96,499,000	32,257,000
Avg Shares	28,606,946	28,475,772
Shr earns		
Income	1.21	1.13
Net income	3.37	1.13

a - Reflects adoption of the new accounting change for foreign currency translation and a change in the method of accounting for investment tax credits.

c - Credit, cumulative effect on prior periods of a change in the method of accounting for investment tax credits.

(Source: The WSJ, 1/22/1982: 36-1)

10.1.4 SAMPLE CLASSIFICATION

This study assumes that if the WSJ does not disclose any significant event, then there is no event affecting income in the reported quarter. Therefore, if no information other than the adoption of SFAS No.52 is disclosed in either the "Digest" and/or the "Report" (if any), a company is classified as a "CLEAN DISCLOSURE". Otherwise, a company is classified as a "MIXED DISCLOSURE". Revlon is an example of a clean disclosure, and Air Products as a mixed disclosure.

For the adoption of SFAS No.52 per se, however, not every adopter made this disclosure in the WSJ. This study calls these firms as "NON-DISCLOSURES". For example, Lenox Inc. adopted the new rule in the fourth quarter of 1981 with immaterial income effect. Its earnings announcement in the Digest of the WSJ did not indicate the adoption of SFAS No.52, as shown in Table 19.

TABLE 19

An Example of Clean Non-Disclosure

--- Lenox, Incorporated ---

(Digest of Corporate Earnings Report)

Lenox Inc. (NYSE): 4Q/81

Year (Dec 31):	1981	1980
Sales	$240,696,000	$242,591,000
Net income	20,672,000	18,781,000
shr earns:		
Net income	4.64	4.26
Quarter (Dec 31):		
Sales	79,344,000	73,216,000
Net income	9,113,000	8,282,000
Shr earns:		
Net income	2.04	1.87

(Source: The WSJ, 2/3/1982: 30-6)

Furthermore, a non-disclosure might disclose other relevant information in the "Digest" and/or in the "Report" (if any), as disclosures did. For example, Honeywell Inc. adopted SFAS No.52 in the second quarter of 1982 with "immaterial" income effect. It did not disclose the adoption of SFAS No.52 in earnings announcement, rather it footnoted some other information, as Table 20 shows.

Similar to disclosures, a NON-DISCLOSURE can be "CLEAN" or "MIXED" depending on whether or not other information is disclosed in the WSJ when earnings are announced. Lenox is an example of a clean non-disclosure; and Honeywell as a mixed non-disclosure.

TABLE 20

An Example of Mixed Non-Disclosure

--- Honeywell Inc. ---

(Digest of Corporate Earnings Report)

Honeywell Inc. (NYSE): 2Q/82

Quar July 4:	1982	1981
Revenues	$1,321,400,000	$1,304,300,000
Income	a 84,500,000	70,700,000
b Extd Cred	1,100,000	700,000
Net Income	85,600,000	71,400,000
shr earns:		
Income	3.78	3.11
Net income	3.83	3.15
6 months:		
Revenues	2,582,400,000	2,515,100,000
Income	a 139,600,000	121,600,000
b Extd Cred	1,500,000	2,100,000
Net Income	141,100,000	123,700,000
Avg Shares	22,358,167	22,649,862
Shr earns:		
Income	6.24	5.36
Net income	6.31	5.46

a - Includes gain of $30,300,000 in the quarter and $66,000,000 in the six months from sale of interest in CII Honeywell Bull and GE Information Services.
b - Tax-loss carry-forward.

(Source: The WSJ, 7/22/1982: 14-4)

10.1.5 MATERIALITY AND THE WSJ DISCLOSURE

In 385 multinationals of the AICPA-600, these "Non-Disclosures" of SFAS No.52 are composed of: (See Table 21.)

1. most adopters with "immaterial" income effects (43/47=91.5%);
2. most adopters that did not disclose the impact (115/154=74.5%); and,
3. some adopters with material income effects (47/184=25.5%).

Notice also that, from Table 21, a significant relationship between the WSJ disclosure of the adoption of SFAS No.52 and the materiality of the income impact exists. (with Chi Square = 117.942, Significance = 0.000.) However, the reasons why some adopters with material effects did not disclose the adoption of SFAS No.52 in the WSJ are not clear.

TABLE 21

Materiality and the WSJ Disclosure

QUARTERLY OR ANNUAL REPORT DISCLOSURES	THE WSJ DISCLOSURES ABOUT SFAS NO.52						
	Clean Disclosure	Mixed Disclosure	Clean Non-Disclosure	Mixed Non-Disclosure	WSJ-AR In-Consistency	Not found on WSJ	TOTAL
Positive Impact	85	20	34	8	0	0	147
Negative Impact	21	7	3	2	4	0	37
Material Impact	106	27	37	10	4	0	184
Immaterial	3	1	35	8	0	0	47
Not Available	24	8	98	17	4	3	154
T O T A L	133	36	170	35	8	3	385

10.2 SAMPLING PROCEDURES

In order to test the hypothesis that differential income from the adoption of SFAS No.52 has information content, 385 multinationals of the AICPA-600 are screened according to the following criteria:

1. A firm should not be a late adopter, which adopted SFAS No.52 for fiscal years beginning on or after December 15, 1982[12];
2. A firm must have data on the CRSP daily files;
3. A firm must have their quarterly earnings disclosed in the WSJ;
4. A firm's quarterly earnings disclosed in the WSJ must be consistent with that disclosed in their interim/ annual report;
5. A firm must disclose the income effect of adopting SFAS No.52 for the quarter (if adoption quarter is not in the fourth quarter) or for the year (if adoption is in the fourth quarter). In order to increase the sensitivity of the analyses, firms with "immaterial" income effects and which did not disclose the adoption in the WSJ are also dropped;

---

[12] Notice that SFAS No.52 is effective for companies with fiscal years beginning on or after December 15, 1982. (SFAS No.52, para. 33.) Therefore, all 1981/1982 adopters and some 1983 adopter with fiscal year ends beginning before December 15, 1982 are early adopters.

6. A firm must be a company listed on the Value-Line Investment Survey;
7. A firm's quarterly earnings must be forecasted under SFAS No.8 by the Value Line;
8. A firm's quarterly earnings should not be forecasted by the management under SFAS No.52.

The detailed numbers of companies screened by each of the above criteria is shown in Table 22. The final sample contains 158 companies, which are grouped into four portfolios:

1. Clean Disclosures (78 firms),
2. Mixed Disclosures (35 firms),
3. Clean Non-Disclosures (34 firms), and
4. Mixed Non-Disclosures (11 firms).

Table 23 shows the sample distribution among adoption years and adoption quarters. 64.5% (100/155) of the samples come from 1981 adopters. 34.2% (53/155) are 1982 adopters. Only two firms are 1983 adopters.

TABLE 22

Screening Processes in This Study

ORIGINAL MULTINATIONALS IN THE AICPA-600	= 385
Subtract:	
1. Firms are not early adopters	= 56
2. Firms are not in the CRSP Tapes	= 18
3. Firms did not disclosed earnings in the WSJ	= 1
4. Firms' earnings in WSJ not consistent with AR	= 7
5. Firms' income impacts unavailable/immaterial	= 119
6. Firms are not in the Value Line	= 5
7. Firms forecasted under SFAS No.52 by Value Line	= 20
8. Firms forecasted under SFAS No.52 by management	= 4
SURVIVING COMPANIES	= 155
Which are composed of:	
(a) CLEAN DISCLOSURES	= 78
(b) MIXED DISCLOSURES	= 35
(c) CLEAN NON-DISCLOSURES	= 32
(d) MIXED NON-DISCLOSURES	= 10

TABLE 23

Sample Distribution Among Years and Quarters

ADOPTION FISCAL YEAR	ADOPTION QUARTER				YEAR TOTAL
	1	2	3	4	
1981	0	0	1	99	100
1982	10	10	12	21	53
1983	0	0	0	2	2
TOTAL	10	10	13	122	155

Chapter XI

RESULTS OF ANALYSES

11.1 INTERACTIVE RELATIONSHIPS AMONG EXPLANATORY VARIABLES

Before studying the market reaction of adopting SFAS No.52, a general examination of the relationships among explanatory variables is desirable. Since the accounting change of SFAS No.52 can affect the reported income, an interesting question can be asked. That is, "Did management make this accounting change to counter-balance the analyst's forecast?" In other words, when the company fared worse than analysts forecasted, did the management take the chance of adopting SFAS No.52 early to increase the reported income? In order to answer this question, Pearson and first-order partial correlation coefficients among explanatory variables are examined, as Table 24 shows.

Table 24 demonstrates that the Pearson correlation between AUE and CAI is significant at 0.000 with a negative relationship. This relationship is even stronger when keeping PAI constant. The first-order partial correlation coefficient increases (from -0.4690 to -0.4753) with the con-

TABLE 24

Pearson and First-Order Partial Correlations

	AUE	CAI	PAI
		(Pearson)	
AUE	.	-0.4690 (P=0.000) df= 143	0.0154 (P=0.427) df= 143
CAI	-0.4753 (P=0.000) df= 142	.	-0.1968 (P=0.009) df= 143
PAI	-0.0888 (P=0.145) df= 142	-0.2147 (P=0.005) df= 142	.
	(First-Order Partial)		

trolling of PAI, and the significance is 0.000. Apparently, when the quarterly earnings are worse than what financial forecasters expected, the management is apt to adopt SFAS No.52 early to compensate for it. And vise versa.

The relationship between AUE and CAI is controllable for management. However, that between CAI and PAI is out of its control. The relationship between CAI and PAI is a function of relative strength among the U.S. dollar and foreign currencies. In the 158 sample, more than 63.3% (100/158) of them made the accounting change for foreign currency translation in the fourth quarter of 1981. (See Table 23.) On the other hand, the relative U.S. dollar strength to the SDR (Special Drawing Right) increased in the first three quarters of 1981, but decreased for the fourth quarter. (See Table 6.) Therefore, it is understandable that the negative relationship between CAI and PAI is significant. The relationship between CAI and PAI is never stable. It is determined by the exchange rates fluctuation. The significant relationship between CAI and PAI in this sample is only reflecting the exchange-rates change in the testing period.

11.2 DISCLOSURE OF ADOPTION DECISION

"DID FIRMS DISCLOSE THE ADOPTION OF SFAS NO.52 ONLY AT THE TIME WHEN QUARTERLY EARNINGS WERE ANNOUNCED?"

This question is crucial to this study. If companies disclosed the adoption and earnings figures simultaneously only, then the accumulation period for abnormal residuals should be limited to a few days around the earnings-announcement dates; otherwise, an accumulation period that guarantees the inclusion of the announcement date of adoption must be employed. This study concludes that, in general, firms disclosed the adoption of SFAS No.52 before the earnings-announcement dates due to the following reasoning and evidences:

11.2.1 REASONING FOR EARLY DISCLOSURE OF ADOPTION DECISION

Companies do not like to scare their shareholders with earnings surprises. Therefore, firms are likely to disclose, via formal or informal channels, the adoption of any significant accounting change before earnings are officially released. This advance notice can be a buffer for possible violent stock price reactions that arise from the puzzlement of investors when earnings are formally announced.

11.2.2 EARLY DISCLOSURE OF ADOPTION IN THE WSJ

The WSJ did disclose the intention of adopting SFAS No.52 for some companies before their earnings were announced. These disclosures are generally after the Value Line's forecasts under SFAS No.8. For example, after Value Line forecasted the earnings under the old rule on August 28, 1981 (VL, 8/28/1981: 1381), Bangor Punta Corp (4Q/81) disclosed in the WSJ that it was "awaiting a possible accounting change that could improve its profit" on November 23, 1981 (WSJ, 11/23/1981:37-3). Bangor Punta adopted SFAS No.52 and announced its earnings under the new rule on December 11, 1981, four days before SFAS No.52 was issued. Two weeks after Value Line made forecasts for earnings of IBM under SFAS No.8 rule (VL, 11/12,1982: 1103), IBM also disclosed the adoption of new rule beforehand by saying that "we've studied the change and its application for some time. We decide to just go ahead and adopt it now," although "under the law the company wasn't required to do so until the first quarter of 1983." (WSJ, 12/2/1982: 5-1.) IBM made its earnings announcements on January 24, 1983.

However, if the Value Line's Investment Survey was issued after a company disclosed its intention to adopt SFAS No.52, Value Line picked up this information and made forecasts under the new rule. For example, Dana Corp. (4Q/81) announced that its board approved "changing its method of accounting for foreign currency translation" in the WSJ one week after the SFAS No.52 was issued (WSJ, 12/22/1981: 8-4):

> "Dana Corp. said its board approved two changes in its accounting method, which, combined, will reduce 1981 earnings by $7.8 million, or 22 cents per share.
> Dana said this year it will switch to the last-in, first out method of valuing those domestic inventories that aren't already on LIFO. This change will reduced earnings by about $17.5 million, or 49 cents a share.
> Dana said it also is changing its method of accounting for foreign currency translation on foreing investments in according with the Financial Accounting Standards Board rule FASB-52. This will reduce the effect of translation losses, and increase earnings for the year by about $9.7 million, or 27 cents a share."
> (WSJ, 12/22/1981: 8-4.)

Value Line also got this information and made its forecasts under the new rule in the issue of January 29, 1982:

> "LIFO isn't the only accounting adjustment. In addition, the company has chosen to adopt FASB 52, the new currency translation rule, which recogniz-

> es only transactional effects and, therefore, reduces the impact of currency exchange rate variations. With considerable international business, Dana will get a bonus of about 27 cents a share from this revision. The net result is that nonoperating items chopped some 20 cents to 25 cents a share from this company's net income last year. Dana is expected to release the figures in about two weeks. Upon receipt of the company's annual report, we'll restate the interim figures for the two accounting adjustments."
> (VL, 1/29/1982: 795.)

And finally, Dana announced its earnings on February 17, 1982.

A few companies disclosed the adoption of SFAS No.52 accompanying with management forecasts for the earnings. For example, Outboard Marine Corp. (4Q/82) announced this adoption when its management made earnings forecasts:

> "Outboard Marine Corp. said it expects to report a 34% decline in fiscal fourth-quarter earnings from a year earlier, and took charges in both periods related to planned changes in its facilities and product line...
> Fourth-quarter profit was estimated at $6.1 million, or 69 cents a share, down from $9.3 million. or $1.11 a share, a year earlier. The 1982 quarter reflects a charge of about $10 million. or 59 cents a share, for 'moving and other costs' related to a plan to build or acquire three plants in 1983, to produce newly designed motors and to increase efficiency, the company said. The 1981 quarter includes a charge from 'the initial stages' of the same program of $5 million. or 30 cents a share...
> For fiscal 1982, profit grew to an estimated $33.8 million, or $4 a share, from $26.9 million. or $3.22 a share, in fiscal 1981...
> The company's estimates of fiscal 1982 results reflect the adoption of new of new foreign currency accounting standards, which boosted 1982 profit $7.7 million, or 91 cents a share, the company said."
> (<u>WSJ</u>, 10/26/1982: 39-3.)

11.2.3 EARLY DISCLOSURE OF ADOPTION DECISION INFERRED FROM VALUE LINE

It is understandable that the WSJ cannot publish all the adoption disclosures because of its editoral priority. Therefore, only three companies mentioned above (i.e. Bangor Punta Corp., Dana Corp., and IBM) had Reports concerning the companies' intention of early adopting the new rule; and two other companies (i.e. Eli Lilly & Co., and Outboard Marine Corp.) disclosed the adoption along with management forecasts. All other companies' adoption information was reported in the WSJ when it issued firms' quarterly earnings.

On the reverse, once a company discloses its decision to adopt SFAS No.52, Value Line must take this information for making the earnings forecasts. In fact, most of the advance notices of adoption are reported by the Value Line's Investment Survey, rather than the WSJ. While there was no any disclosure of this adoption for the Colgate-Palmolive Co. (4Q/81) in the WSJ, however, Value Line stated that "Colgate plans to take advantage of FASB 52." "We've estimated what the revised quarterly earnings will be," Value Line forecasted, "our estimate of 1981 full-year earnings is $2.60 a share (on the new basis), an increase of 23%":

> "Earnings results for 1981 will be restated to exclude most foreign currency exchange losses. Colgate plans to take advantage of FASB 52, the new accounting rule that limits translation adjustments to actual transactions, minimizing distortions from balance sheet valuation changes. As a

> result, last year's net will be revised upward by about 55 cents to 60 cents a share (1980 earnings included a 4 cents-a-share translation loss under FASB 8, the old rule). We've estimated what the revised quarterly earnings will be. Our estimate of 1981 full-year earnings is $2.60 a share (on the new basis), an increase of 23%."
> (VL, 2/5/1982: 981.)

Colgate announced its earnings on February 19, 1982.

Similarly, Value Line also disclosed that "though FASB 52 is not mandatory until 1983, General (Signal) will adopt the rule this year," while the WSJ did not disclose this adoption for the General Signal in any way.

> "General Signal has been hurt more by currency translation losses than by the ongoing business slowdown. Sales in 1981 were strong enough to lift earnings 13% year to year. But with General doing about 20% of its business in foreign market, currency translation loss took away roughly 25 cents a share.
> A new accounting standard will insulate earnings from wide currency gains and losses. Under FASB 52, the effect of fluctuating exchange rates on a company's profit-and-loss statement will be limited to entries for actual transactions. By contrast, paper gains and losses on the balance sheet will not impact bottom line results. Though FASB 52 is not mandatory until 1983, General will adopt the rule this year."
> (VL, 2/12/1982: 1015.)

General Signal Corp. (1Q/82) made its earnings announcement on April 26, 1983. Same stories happened for Johnson & Johnson (4Q/81), Burndy (4Q/81), CBS (4Q/81), Grace (1Q/82), Levi Strauss(1Q/82), Chesebrough-Pond (1Q/82), etc.

As mentioned earlier, most companies did not decide to adopt the new rule before Value Line were issued. Therefore, Value Line made most earnings forecasts based on the old rule. That makes this study possible because the explanatory variables are constructed based on the forecasts under the old rule.

11.3 UPWARD-ACCUMULATION TESTS FOR INFORMATION CONTENT

In order to examine whether the incremental income from adopting SFAS No.52 has information content, this study uses 78 clean disclosures to examine it. According to Morse (1984), among others, the price reactions to quarterly earnings announcements occurs on the date prior to and the day of the WSJ disclosure. Therefore, this study accumulates abnormal residuals backward from the WSJ dates, i.e., [-1, +1], [-2, +1], [-3, +2], [-4, +3], [-5, +3] and finally up to [VL, +3], and tests the hypothesized model of Equation 8-5. The empirical results are shown in Table 25.

As shown in previous studies, AUE is significantly correlated with CAR for all cases in Table 25. That means the market reacts to the unexpected changes in quarterly earnings under the old rule around the WSJ dates. For the same accumulation periods, however, the market does not react to the signals of income impacts of adopting SFAS No.52. CAI and PAI do not correlate with CAR within few days around the

TABLE 25

Upward and Downward Accumulation Tests for Information Content

CAR around WSJ	Exp. Sign	a (.)	AUE (+)	|CAI| (+)	|PAI| (+)	VARN (.)	F (sig.)	R-SQ ADJ. R-SQ
	Coef	-0.0050	0.0070	0.0009	0.0000	0.6960		
[-1, +1]	t	-0.589	1.963	0.048	0.002	0.416	1.094	0.0631
(n=70)	sig.	(0.557)	(0.053)*	(0.961)	(0.998)	(0.678)	(0.367)	(0.0054)
	Coef	-0.0047	0.0062	0.0035	-0.0000	-0.0757		
[-2, +1]	t	-0.522	1.645	0.166	-0.005	-0.076	0.774	0.0455
(n=70)	sig.	(0.603)	(0.104)*	(0.868)	(0.996)	(0.940)	(0.546)	(-0.0133)
	Coef	-0.0108	0.0080	0.0143	0.0157	0.4842		
[-3, +2]	t	-1.157	2.070	0.651	0.939	1.067	1.309	0.0756
(n=69)	sig.	(0.251)	(0.042)**	(0.517)	(0.351)	(0.289)	(0.276)	(0.0178)
	Coef	-0.0101	0.0093	0.0395	0.0207	0.3253		
[-4, +3]	t	-0.959	2.156	1.609	1.111	1.143	1.682	0.0965
(n=68)	sig.	(0.341)	(0.034)**	(0.112)+	(0.270)	(0.257)	(0.165)	(0.0391)
	Coef	-0.0158	0.0102	0.0492	0.0464	0.2196		
[-5, +3]	t	-1.189	2.163	1.815	1.160	0.899	1.667	0.1031
(n=63)	sig.	(0.239)	(0.034)**	(0.074)*	(0.251)	(0.372)	(0.170)	(0.0412)
	Coef	-0.0362	0.0279	0.1506	0.0663	0.0204		
[VL, +3]	t	-1.974	3.338	3.132	1.818	1.763	5.018	0.2332
(n=71)	sig.	(0.052)**	(0.001)***	(0.002)***	(0.073)*	(0.082)*	(0.001)***	(0.1867)
	Coef	-0.0243	0.0272	0.1200	0.0548	0.0129		
[VL, -1]	t	-1.517	3.729	2.863	1.723	1.102	4.763	0.2267
(n=70)	sig.	(0.134)	(0.000)***	(0.005)***	(0.089)*	(0.274)	(0.002)***	(0.1791)
	Coef	-0.0200	0.0226	0.1141	0.0503	0.0068		
[VL, -2]	t	-1.328	3.307	2.895	1.683	0.597	3.967	0.1962
(n=70)	sig.	(0.188)	(0.001)***	(0.005)***	(0.097)*	(0.552)	(0.006)***	(0.1467)
	Coef	-0.0193	0.0230	0.1099	0.0501	0.0107		
[VL, -3]	t	-1.251	3.305	2.744	1.649	0.882	3.939	0.1976
(n=69)	sig.	(0.215)	(0.001)***	(0.007)***	(0.104)*	(0.381)	(0.006)***	(0.1474)

(1) Testing group is Group A: CLEAN DISCLOSURES (N=78), with complete data indicated by n.

(2) Estimation period = 240 trading days before accumulation period. Estimation period = 180 is also conducted; results are similar.

WSJ disclosure dates. Nevertheless, when the accumulation period extends back toward the Value Line dates, the effects of CAI and PAI on cumulative residuals appear gradually. As the accumulation period reaches the Value Line's issue dates, the significances of CAI and PAI totally emerge. These empirical results infer either the decision of adopting SFAS No.52 were disclosed before the earnings announcements, or the market had already impounded the exchange rates information into the estimation of earnings. Because of the complex mechanism of SFAS No.52's effects on earnings (see Chapter V, "SFAS No.52 and Value Line's quarterly forecasts"), early disclosure of adopting the new rule is more likely to be the case.

11.3.1 A CLOSER LOOK ON THE INCOME EFFECTS OF ADOPTION

Since the exact disclosure date of adopting SFAS No.52 cannot be identified through the data available, the only method which guarantees the inclusion of that disclosure date is the Value Line's issue date. Because when Value Line forecasts the earnings based on the old rule, the disclosure of adoption should not have been made at that time. And this study includes only those companies whose earnings were forecasted by Value Line under the old rule. The empirical results of this study show that cumulative abnormal residuals between the Value Line's issue date and the WSJ earnings-announcement date is significantly correlated with the income impacts of adopting SFAS No.52, as this study hypothesizes. In other words, the incremental income from adopting SFAS No.52 has information content. (See the regression with accumulation period of [VL, +3] in Table 25.)

Two conclusions can be observed from the regression with accumulation period of [VL, +3] in Table 25:

1. The significances of market reaction to AUE, CAI, and PAI are not the same. Since the test model here is a multiple regression, the significance is "partial" in nature, i.e. given other explanatory variables constant. The market reaction to the AUE is more significant than to CAI, the latter is more significant than PAI. The significance of AUE over that of CAI and PAI probably comes from the cognitive processes of the market to SFAS No.52. And the significance of CAI over that of PAI can be explained as the stronger market reaction to the recent signal of CAI than prior signal of PAI. CAI is a recent and direct signal of possible changes in hedging activities. PAI is only a second signal of this change at the best.
2. Among these 78 Clean Disclosures, only 9 firms' income impact of adopting SFAS No.52 for the current quarter can be found in the WSJ. However, the sig-

nificant market reaction to the AUE and CAI shows that the market is informed of the income effect of adoption for the current quarter. Owing to the editorial priority of a newspaper, information that did not appear in the WSJ is not necessarily undisclosed in fact.

11.4 DOWNWARD-ACCUMULATION TESTS FOR INFORMATION CONTENT

The empirical results stated in the previous section concluded that incremental income from the accounting change of SFAS No.52 has information content. In order to verify this argument further, this study also accumulates CAR's from Value Line issue dates down to one, two, and three days before the WSJ dates and tests the hypothesized model. The empirical results are shown by the lower portion of Table 25.

Two conclusions can be drawn from these additional tests:

1. CAI and PAI are significantly correlated with CAR's when CAR's are accumulated from Value Line dates down to few days before the WSJ dates. This is a direct verification of the argument drawn from previous section that incremental income signals of adopting SFAS No.52 have information content and the market reac-

tion to CAI and PAI are before the WSJ dates. Also, as noted in the previous section, the significances of AUE, CAI, and PAI are in the following order: AUE > CAI > PAI. This relationship still holds when accumulating residuals from Value Line dates down to few days before the WSJ dates.

2. Since the significance of AUE increases sharply from some 0.03 to 0.0001 when accumulation periods extend from few days before the WSJ dates up to Value Line dates, it is expected some "predisclosure information" about earnings under the old rule are available before earnings announcements dates in the WSJ. This possibility is proven by the significant correlation between AUE and CAR, when the latter are accumulated from the Value Line dates down to the WSJ dates. As shown by the lower portion of Table 25, AUE keeps its significances when CAR's are accumulated from the Value Line dates down to few days before the WSJ dates. This means that "predisclosure information" for AUE exists in the sample firms. The predisclosure-information phenomenon was observed as early as 1968, when Ball and Brown (1968) found that a significant portion of the information about annual earnings was reflected in security prices prior to the report month. Brown and Kennelly (1972) also found this phenomenon for quarterly earnings. The predis-

closure information are not rare for popular big companies. Some industries do disclose weekly production data, ten-days sales data (e.g. automobile companies), and/or monthly sales data (e.g. department stores). Other forms of predisclosure information may also be available informally. And through previous experiences, the market can process this "predisclosure information" and make a reasonable judgment about the coming quarterly earnings if there is no significant accounting rule changes. Researches show that the larger a firm is, the more predisclosure information is available. However, after controlling firm size, ex post unexpected earnings still have incremental explanatory power. (see Atiase, 1985; Bamber, 1987, among others.) Since all the sample firms in this study are listed in the NYSE, the existance of predisclosure information is not a surprise.

11.5 GROUPING TESTS FOR INFORMATION CONTENT

11.5.1 ADDING THE MIXED DISCLOSURES

In order to test the validity of conclusions drawn from the clean disclosures, this study conducts three additional analyses. First, this study adds the mixed disclosures into original clean disclosures. The mixed disclosures are those companies that disclosed the adoption of SFAS No.52 along with other new information for the quarter of switch. Notice that the "other new information" only deteriorates the pureness of current signal CAI. It does not affect PAI unless this simultaneous information including other accounting changes that are required to restate previous financial statements under APB Opinion 20. All 35 mixed disclosures in this study did not make any accounting changes required to restate, i.e., LIFO switch-away, "successful effort"-"full cost" switch, "complete contract"-"percentage completion" switch, or change in reporting entity. Since the PAI is not "polluted" by the other new information in this quarter, therefore, adding the mixed disclosures to clean disclosures group will still keep PAI significant. However, the significance of CAI will diminish because of the interferences from other simultaneous information for the quarter. The empirical results confirm this argument. (See Table 26.)

TABLE 26

Grouping Tests for Information Content

[VL, +3] around WSJ	Exp. Sign	a (.)	AUE (+)	|CAI| (+)	|PAI| (+)	VARN (.)	F (sig.)	R-SQ ADJ. R-SQ
Group A	Coef	-0.0362	0.0279	0.1506	0.0663	0.0204		
(N=78)	t	-1.974	3.338	3.132	1.818	1.763	5.018	0.2332
(n=71)	sig.	(0.052)	(0.001)***	(0.002)**	(0.073)*	(0.082)*	(0.001)***	(0.1867)
Groups A+B	Coef	-0.0223	0.0187	0.0339	0.0486	0.0219		
(N=113)	t	-1.555	2.701	1.354	1.688	2.097	3.306	0.1178
(n=104)	sig.	(0.123)	(0.008)***	(0.178)	(0.094)*	(0.038)**	(0.013)**	(0.0822)
Groups A+C	Coef	-0.0226	0.0204	0.0979	0.0349	0.0194		
(N=110)	t	-1.355	2.741	1.941	0.935	1.850	2.999	0.1111
(n=101)	sig.	(0.178)	(0.007)**	(0.055)*	(0.352)	(0.067)*	(0.022)**	(0.0741)
All Groups	Coef	-0.0183	0.0146	0.0297	0.0209	0.0204		
(N=155)	t	-1.439	2.393	1.437	0.738	2.231	2.444	0.0661
(n=143)	sig.	(0.152)	(0.018)**	(0.152)	(0.461)	(0.027)**	(0.049)**	(0.0391)

(1) Group A: CLEAN DISCLOSURES (N=78) with complete data (n=71).
Group B: MIXED DISCLOSURES (N=35) with complete data (n=33).
Group C: CLEAN NON-DISCLOSURES (N=32) with complete data (n=30).
Group D: MIXED NON-DISCLOSURES (N=10) with complete data (n= 9).

(2) Estimation period = 240 trading days before accumulation period.
Estimation period = 180 is also conducted; results are similar.

Table 26 shows the influences of adding other groups to the original clean disclosures. If mixed disclosures are added, the significance of CAI diminishes from 0.002 to to 0.178, while PAI keeps the level of significance under 0.094. The reducing significance of AUE (from 0.001 to 0.008) comes from the interference of simultaneous changes in the same quarter. Since PAI is just a second signal of possible changes in hedging activities, the significance is not so strong as that of CAI or AUE. Therefore, a small reduction in t value can make PAI out of the level of significance of 10%. Empirical result that keeps PAI significant while CAI becomes insignificant can not be explained as just by chance.

11.5.2 ADDING THE CLEAN NON-DISCLOSURES

On the contrary, if the Clean Non-disclosures are added into original Clean Disclosures, PAI will be affected more than CAI because of the weak significance of PAI in the original clean disclosures. Table 27 shows this argument. When the Clean Non-Disclosures are added, the significance of PAI diminishes while CAI still shows its level of significance under 0.055, though it is reduced from 0.002. The reduction in significance of AUE and CAI is understandable in this case because AUE is not available for clean non-disclosures. Clean non-disclosures only announce $R\tilde{U}E$, which is significantly correlated with AUE for that group (with Pearson correlation coefficient = 0.99604, significance = 0.0001.)

11.5.3 ALL SAMPLE

When all four groups are put altogether for analysis, only AUE shows its significance of 0.018. CAI and PAI are significant at the levels of 0.150 and 0.462 respectively. The ability of enduring the "noise" is not the same for three explanatory variables. AUE is the strongest one; CAI next; and PAI is the weakest. Analyses based on the lump-sum sample can not find the subtle market reaction of the adoption impact of SFAS No.52.

11.5.4 REDUCED SAMPLE

To examine the effect of confounding events on our conclusions, this study reviews the WSJ Index and drops those firms with dividend change announcements, announcements of hostile purchase of stocks, announcement of change financial policy, announcement of defaulting loan agreement, and those having possible market reactions (to the judgment of this study) happened between the Value Line's issue date and WSJ earnings-announcement date. The results are basically consistent with the arguments obtained from the initial sample. As being expected, significances for AUE, CAI and PAI in the reduced sample are stronger than those in the original sample, as Table 27 shows.

TABLE 27

Regression Results for Reduced Clean Disclosures: [VL, +3]

CAR around WSJ	Exp. Sign	a (.)	AUE (+)	CAI (+)	PAI (+)	VARN (.)
Reduced Group A (n=59)	Coef	-0.0597	0.0295	0.1705	0.1842	0.0217
	t	-2.569	3.307	3.237	2.269	1.742
	sig.	(0.013)**	(0.001)***	(0.002)***	(0.027)**	(0.008)***
[VL, +3]	F	5.330		F sig.	(0.001)***	
	R%	0.2830		Adj. R%	0.2299	

Chapter XII

CONCLUDING REMARKS

Based on the empirical analyses on SFAS No.52, this study concludes the followings:

(1) ADOPTING QUARTER IS THE ONLY VALID CRITERION FOR CLASSIFICATION.

Looking precisely into the exact quarter a firm made the accounting change of SFAS No.52 is necessary for identifying the timing of adoption and correctly classifying early-late adopters. Obscurely using the year of adoption as the basis of classification will deteriorate the analyses. In the case of SFAS No.52, using the year criterion will mis-classify up to 38.6% of early adopters as late adopters. (See Table 13). Since none of the published articles classify early-late adopters based on the precise quarter of adoption, those studies should be revised in order to verify their arguments.

(2) USING ANNUAL DATA WILL MIS-SPECIFY THE EXPLANATORY VARIABLES.

Since firms release their earnings quarterly, lump-sum annual earnings is a mixture of new information and old information. It is generally accepted that the market reacts to new information only. The market will not react to old information that has been reflected in the previous periods. Therefore, excluding the old information and constructing variables based on the New Information de Facto for the quarter of accounting change is the only valid approach to explore the market reaction to the new accounting information. Using hybrid annual signal will mis-specify the explanatory variables, as Table 7 shows.

(3) THE DECISION OF EARLY ADOPTION WAS DISCLOSED BEFORE EARNINGS ANNOUNCEMENTS.

For such an important promulgation as SFAS No.52, multinationals are likely to disclose their intention of adoption before they announce their earnings. The motivation for it is to lessen the puzzlement of investors when new earnings are officially released. Bangor Punta Corp., Dana Corp., and IBM are good examples of this. The empirical results of this study also show this tendency. (See Table 25). Cumulative residuals in three days around the earnings-announcement dates only correlated with AUE. And when the accumulation period extends backward, adoption signals start to play their roles. In order to capture the market reaction to the adoption, accumulation period for residuals should be long enough to cover the possible adoption disclosure date, rather than just limited to a few days around the earnings-announcement dates.

(4) VALUE LINE'S ISSUE DATE IS THE OPTIMAL STARTING DATE FOR ACCUMULATION.

Theoretically, the accumulation period for residuals can be extended backward to previous earnings-announcement date. However, accumulating residuals over the whole quarter has the danger of including too many irrelevant noises. The research strategy, therefore, is to shorten the accumulation period and at the same time, guarantee the inclusion of the adoption disclosure dates. Value Line's issue date is the best candidate for the following reasons:

1. 96.4% (349/362) of Value Line quarterly forecasts are released after previous quarterly announcement dates. The average period between the Value Line's issue dates and the <u>WSJ</u> earnings-announcement dates is 48 days, which is much shorter than 90 days. Using Value Line's issue dates, obviously, shortens the accumulation period.
2. This study employs the Value Line's forecast figure to construct explanatory variables. Using its issue dates as starting dates for accumulation implies to impound all relevant macro-economic and firm-specific

information before the issue date into the explanatory variables.

3. Value Line's quarterly description of forecast background for the company enables researchers to identify the basis of the forecast (under SFAS No.8 or SFAS No.52). This special feature is provided only by the Value Line, not by other forecasters.

4. Because of its large circulation compared to other forecasters, Value Line's quarterly forecasts are proven to be a good proxy for market expectation of earnings (Brown and Rozeff, 1978.)

5. Value Line is the only data source that provided quarterly earnings forecasts for the years of study (1981-1984).

(5) INCOME IMPACT OF ADOPTING SFAS NO.52 HAS INFORMATION CONTENT.

Using 78 clean disclosures of SFAS No.52, this study accumulates abnormal residuals from Value Line's issue date to three days after the WSJ earnings-announcement date. The CAR are then regressed with AUE, CAI, and PAI. As all previous studies, this study also finds very significant relations between CAR and pure earnings signal, AUE. Aside from that, two adoption signals, CAI and PAI, are significant too. The significance of CAI is substantially higher than that of PAI. (See Table 25.) This is reasonable because

CAI is the first recent signal for possible change of hedging activities. Whereas PAI is only a remote second reference signal.

In order to make sure that the significance of CAI and PAI are not by chance, this study further combines mixed disclosures and clean non-disclosures respectively to test its validity. When the mixed disclosures are added, the significance of PAI remains, while that of CAI disappears. On the other hand, as clean non-disclosures are added, CAI keeps its significance while PAI loses it. These results strengthens the conclusion that income effect of adopting SFAS No.52 has information content. (See Table 26.)

(6) THE STRENGTH OF SIGNIFICANCES ARE RANKED IN THIS ORDER: AUE > CAI > PAI.

The market is, apparently, familiar with the pure earnings signal, AUE. The stronger significance of AUE than that of adoption signals, CAI and PAI, is understandable. Also, since CAI is the recent and first-reference signal for possible change in hedging activities, its significance should be stronger than that of PAI, which is only a remote second-reference signal. (See Table 25.)

(7) COMPANIES CHANGE THEIR HEDGING ACTIVITIES AFTER THE ADOPTION OF SFAS NO.52.

Survey studies on SFAS No.52 unanimously conclude that the use of forward contracts to hedge translation exposure has reduced after the promulgation of the standard. (Andrews, 1984; Evans and Doupnik, 1986; Griffin, 1987.) Some companies also disclosed in their annual reports that they had changed their foreign exchange risk management after adopting the new standard. For example, Air products and Chemicals cancelled all parallel hedges because of the adoption of SFAS No.52. McDonald's also change its foreign exchange management practices after the adoption. Perhaps the most direct evidence of these changes is the dramatic 16% reduction in foreign exchange turnover for non-financial customers of U.S. banking institutions during 1980 to 1983. However, in the same period, the foreign exchange turnover reported by the banks rose about 44%. (Andrews, 1984:70). The changes in hedging activities stem from the shift from accounting hedges to economic hedge and/or change in transaction exposure for firms adopting the new rule. (See Section 3.2.)

(8) FINANCIAL FORECASTERS ARE NOT EXPERTS IN ACCOUNTING STANDARDS.

It is generally believed that financial forecasters make better earnings forecasts because of various information sources they have access to. However, in the case of SFAS No.52 which management has paramount discretionary power for determining functional currencies, financial forecasters show their awkwardness. (See Chapter V.) They made wrong forecast about whether companies adopted the new rule early or not (e.g. Bristol-Myers Co., Baxter Travenol Laboratories, Shering-Plough Corp, etc.). They misunderstood the purpose of hedges and claimed that companies would not adopt the new rule early because they already hedged foreign assets. (e.g. Air Products and Chemicals.) They might simply think adopting SFAS No.52 is nothing but deducting translation gains/losses from current income and it turns out that companies decided that the functional currency for its foreign operations is the U.S. dollar (e.g. Texaco.) And no forecasting concerning the change of functional currencies has been made. (e.g. Acme-Cleveland Corp., Ampco-Pittsburgh Corp., General Signal Corp., etc.) For SFAS No.52 per se, financial forecasters did not do a superior job to the accounting academia.

Chapter XIII

LIMITATION OF THIS STUDY

Although the empirical results of this study follow the hypotheses proposed, some limitations exist:

(1) DRAIN OF SAMPLE.

Owing to lack of mandated disclosure for adopters of SFAS No.52 after March 31, 1982, 43.4% (167/385) of the adopters did not disclose the adoption effect on net income. The sample size is thus substantially reduced. Researchers are powerless about the drain of sample companies because of regulations that are out of their control.

(2) EXPLANATORY MODEL VS. PREDICTIVE MODEL.

The regression model in this study is only an explanatory model, rather than a predictive model. A good predictive model must have a high R-square value. (R-square value represents the ratio of explained variation to the total variation in the dependent variable.) However, a good explanatory model only requires a high F value for testing all explanatory variables together; (F value represents the ratio of explained variance to the unexplained variance in the dependent variable.) or a high t-value for testing individual explanatory variables. A model is explanatory in the sense that it can explain the relationship between dependent variable and explanatory variable(s). However, to estimate the value of a dependent variable through explanatory variables is out of its purpose. For most accounting and finance studies that test hypotheses, an explanatory model is adequate.[13] Only in a few studies that the dependent variable must be reasonably estimated by explanatory variables for subsequent usage need a high R-square value. For example, in a complex macro-econometric model where a predictive model is one of several simultaneous equations, then a high R-square value is required for each constituent regression. It is because the predicted value of a dependent variable for an equation acts as an explanatory variable for other equations.

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[13] "Some researchers play the game of maximizing R^2, that is choosing the model that gives the highest R^2. But this may be dangerous. For in regression analysis our objective is not to obtain a high R^2 per se but rather to obtain dependable estimates of the true population regression coefficients and draw statistical inferences about them. In empirical analysis it is not unusual to obtain a very high R^2 but find that some of the regression coefficients are either statistically insignificant or have signs which are contrary to a priori expectations. Therefore, the researcher should be more concerned about the logical or theoretical relevance of the explanatory variables to the dependent variable and their statistical significance. If in this process we obtain a high R^2, well and good; on the other hand, if R^2 is low, it does not mean the model is bad."
(Gujarati, 1978: 111.)

Generally, the R-square value will be higher when explanatory variables are main determinants of the dependent variable. For example, consumption with personal disposable income (Wu, 1981; R^2 = 0.99), dividend change with prior earnings and dividend (Watts, 1972; R^2 = 0.58), current-cost income with value of the firm (Haw and Lustgarten, 1986; R^2 = 0.99), etc.

For the market model per se, the R-square value of a time-series regression for a specific company (e.g. estimating beta for a firm) generally is higher than that of a cross-sectional regression (e.g. testing CAPM). In testing CAPM cross-sectionally, Fama and MacBeth (1979) got R-square values around 0.26 to 0.44. Furthermore, if a CAR is used as the dependent variable, the R-square value is even lower because of confounding events for the firm and/or for the industry, which may or may not be in the WSJ. (For example, Hagerman, Zmijewski, and Shah, 1984; R^2 = 0.05; Leftwich, 1981, R^2 = 0.18; Holthausen, 1981, R^2 = 0.13). The R-square values of the tested model in this study (R^2 = 0.23, with adj. R^2 = 0.19) are on the same, or higher, level compared with most published articles using CAR's as dependent variables. Nevertheless, the model in this study cannot be used for predictive purposes.

Appendix A

SOME INTERESTING STATISTICS ABOUT MULTINATIONALS

Crucial descriptive statistics about multinationals can provide a general picture for them. Here are some interesting statistics about multinationals in AICPA-600:

(a) WHERE ARE THEY LOCATED?

The headquarters of multinationals are located in 34 of fifty states in the United States, plus one firm in Washington D.C.. The five most popular states for multinationals are: (1) New York, (2) Illinois, (3) Pennsylvania, (4) Connecticut, and (5) Ohio. The geographical distribution is shown in Table 28.

(b) WHO AUDITED THEM?

Imaginably, most U.S. multinationals are the big eight's clients. Who are the top three? They are (1) Arthur Andersen (2) Price Waterhouse, and (3) Ernst & Whinney. The auditors distribution is shown in Table 29.

(c) WHERE ARE THEIR STOCKS TRADED?

TABLE 28

Geographical Distribution of Multinationals

STATE	Number	%
(1) New York	73	19.0 %
(2) Illinois	47	12.2 %
(3) Pennsylvania	31	8.1 %
(4) Connecticut	30	7.8 %
(5) Ohio	29	7.5 %
(6) California	26	6.8 %
(7) New Jersey	24	6.2 %
(8) Michigan	21	5.5 %
(9) Texas	16	4.2 %
(10) Massachusetts	15	3.9 %
(11) Wisconsin	11	2.9 %
(12) Minnesota	10	2.6 %
(13) Missouri	7	1.8 %
(14) Indiana	5	1.3 %
(15) Maryland	4	1.0 %
(16) North Carolina	4	1.0 %
(17) Oklahoma	4	1.0 %
(18) Georgia	3	0.8 %
(19) Virginia	3	0.8 %
(20) Washington	3	0.8 %
(21) Colorado	2	0.5 %
(22) Delaware	2	0.5 %
(23) Kentucky	2	0.5 %
(24) Rhode Island	2	0.5 %
(25) Alabama	1	0.3 %
(26) Arkansas	1	0.3 %
(27) Arizona	1	0.3 %
(28) Florida	1	0.3 %
(29) Hawaii	1	0.3 %
(30) Iowa	1	0.3 %
(31) Idaho	1	0.3 %
(32) Louisiana	1	0.3 %
(33) Tennessee	1	0.3 %
(34) Utah	1	0.3 %
(35) Washington D. C.	1	0.3 %
TOTAL	385	100.0 %

TABLE 29

Auditors Distribution for the Multinationals

AUDITOR	Number	%
(1) Arthur Andersen	68	17.7 %
(2) Price Waterhouse	65	17.0 %
(3) Ernst & Whinney	49	12.7 %
(4) Peat Marwick, Mitchell	47	12.2 %
(5) Coopers & Lybrand	40	10.4 %
(6) Deloitte, Haskins & Sells	38	9.7 %
(7) Arthur Young	35	9.1 %
(8) Touche Ross	19	4.9 %
(9) Main Hurdman	9	2.3 %
(10) Alexander Grant	5	1.3 %
(11) J. H. Colm	2	0.5 %
(12) David Berdon	1	0.3 %
(13) Edward Issaacs	1	0.3 %
(14) Geo S. Olive	1	0.3 %
(15) Laventbol & Horwath	1	0.3 %
(16) Moore, Smith & Dale	1	0.3 %
(17) Robins, Greene & Horowitz	1	0.3 %
(18) Seidman & Seidman	1	0.3 %
(19) Weinlaur, Fitzlyn & Schab	1	0.3 %
TOTAL	385	100.0 %

Of course, most multinationals are big enough to be listed on the New York Stock Exchanges. Some of them are AMEX and OTC companies. See the distribution of exchanges in Table 30.

(d) DID VALUE LINE FORECAST THEIR EARNINGS?

Fortunately, it did forecast for 94.0% (362/385) of multinationals. That makes this study possible. Table 31

TABLE 30

Distribution of Exchanges for Multinationals

EXCHANGE	Number	%
NYSE	348	90.4 %
AMEX	13	3.4 %
OTC	24	6.2 %
TOTAL	385	100.0 %

shows the distribution of Value Line forecasts among four years' adopters (1981-1984).

TABLE 31

Value Line's Forecasts for Multinationals

FISCAL YEAR	FORECAST UNDER #8	FORECAST UNDER #52	N/A	YEAR TOTAL
1981	124	15	5	144
1982	142	9	14	165
1983	20	41	3	64
1984	2	9	1	12
TOTAL	288	74	23	385

(e) HOW MANY COMPANIES USED U.S. DOLLAR FOR THE ONLY FUNCTIONAL CURRENCY?

Not many. Only 6.2% (24/385) of multinationals declared that the U.S. dollar was the only functional currency when they made the accounting change of SFAS No.52. These companies distributed more among later adopters. Others used some or all local currencies as functional currencies for their foreign operations. See Table 32.

TABLE 32

Distribution of Firms using U.S. $ as the only Functional Currency

FISCAL YEAR	FUNCTIONAL CURRENCY U.S. $	FUNCTIONAL CURRENCY LOCAL	YEAR TOTAL
1981	5	139	144
1982	8	157	165
1983	9	55	64
1984	2	10	12
TOTAL	24	361	385

(f) DID FIRMS ANNOUNCE EARNINGS AFTER AUDITOR'S REPORTS WERE SIGNED?

Yes, three fourths of the firms did so; but one fourth did not. 199 of the 385 multinationals adopted SFAS No.52 in the fourth quarter and had their financial statement audited. Among these 199 fourth-quarter adopters, 140 (70.4%)

firms announced their earnings AFTER the auditors signed the reports, 4 (2%) firms announced the SAME day, and only 55 (27.6%) announced earnings BEFORE the auditor's report date. The average period after the auditor's report date is 3.6 days; and that before the auditor's report date is 14.7 days. Apparently, management is eager to announce its results as soon as possible, some even announced their earnings before the auditors signed the reports. Since the reported income is proven to have information content, announcing earnings before the auditor signed the report might make management face possible litigation. The time span between the auditor report date and the earnings announcement date is represented in Table 33.

TABLE 33

Time Span from Auditor's Report Date to Earnings Announcement Date

(Auditor)-(WSJ Date)	SAMPLE	MIN.	MAX.	MEAN	S.D.
< 0	140	-20	-1	-3.6	3.7
= 0	4	0	0	0.0	0.0
> 0	55	+1	+38	+14.7	10.5
T O T A L	199	-20	+38	-1.5	10.3

(g) DID FIRMS ANNOUNCE EARNINGS BEFORE MANAGEMENT SUBMITTED THE 10-Q ?

Yes, most companies (168/183=91.8%) did so. According to the SEC requirement, the 10-Q must be filed within 45 days after the end of each of the first three quarters of its fiscal year. And generally, interim reports to shareholders are prepared before that date. Among 186 non-fourth-quarter adopters of SFAS No.52, three firms are dropped because they did not have their earnings disclosed in the WSJ for the quarter of adopting SFAS No.52. They are Simplicity Pattern Co. Inc., Paxall, Inc., and Pettibone Corp. Of 183 firms with earnings disclosed in the WSJ, 167 (91.3%) announced their quarterly earnings before the management submitted their 10-Q to the SEC, one firm on the same date; Only 14 (8.2%) firms announced their quarterly earnings after the management signed the 10-Q report. The time span between earnings-announcement date and 10-Q submission date is shown on Table 34.

TABLE 34

Time Span from Earnings Announcement Date to 10-Q Date

(WSJ Date)-(10Q Date)	SAMPLE	MIN.	MAX.	MEAN	S.D.
< 0	167	-34	-1	-17.5	7.1
= 0	1	0	0	0.0	0.0
> 0	15	+1	+19	+4.5	4.8
T O T A L	183	-34	+19	-15.6	9.2

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