

A Profile Analysis of the Predictability of Accounting Earnings Numbers After FAS52

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Abstract

According to the Statement of Financial Accounting Concepts No. 2, usefulness of accounting earnings numbers stems partially from its predictive ability. In 1981 the FASB replaced FAS8 with FAS52. FAS52 offered multinational companies two choices: (1) several possible adoption dates; (2) choice of a functional currency. This study uses financial analysts' earnings forecasts to test the hypothesis that the change in foreign currency translation rule from FAS8 to FAS52 has improved earnings forecasting. Profile analysis of the data does not support the hypothesis.

Introduction

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

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 "Foreign Currency Translation," (FAS52) which superseded FAS8.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

If management chooses the dollar as the functional currency, then the translation process under FAS52 is essentially the same as under the old FAS8: The temporal method is used, with gains or losses resulting from translation included in income for the period. On the other hand if local currency is chosen as the functional currency, then

FAS52 requires use of the current rate translation method and deferral of translation gains and losses by placing them on the balance sheet as a component of the stockholders' equity account, which allegedly will result in smoother earnings reports and greater predictability. While adoption of FAS52 was not required until 1983, earlier application was encouraged, and elected by many companies.

The purpose of this paper is to compare earnings forecast accuracy under FAS52 with the earnings forecast accuracy under FAS8. Section one develops the conceptual model. Section two explains the methodology. Section three reports the results. Finally section four presents the summary and concluding comments.

I. Conceptual Model

The Statement of Financial Accounting Concepts No. 2, (SFAC2), "Qualitative Characteristics of Accounting Information" states that:

The qualities that distinguish "better" (more useful) information from "inferior" (less useful) information are primarily qualities of relevance and reliability.

(Par 15)

SFAC2 further clarifies that:

To be relevant to investors, creditors, and others for investment, credit, and similar decisions, accounting information must be capa-

ble of making a difference in a decision by helping users to form predictions about the outcome of past, present, and future events or to confirm or correct expectations.

(Par 47)

Accordingly, the concern of this study is the relative usefulness of accounting earnings numbers under alternative foreign currency translation rules. The accounting method that facilitates more accurate forecast of future earnings is "more useful" to investors. Since investor earnings expectations are not directly observable, the analysts' forecasts under FAS52 and analysts' forecasts under FAS8 will be compared by testing the hypothesis that FAS52 has increased forecast accuracy.

II. Methodology

Research Strategy

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

- (1) Financial analysts' predictions are a matter of public record (Baldwin 1984);
- (2) Financial analysts are themselves potential users of financial information (Brown, 1983, McKinnon, 1984);
- (3) Financial analysts' forecasts contain information (Elton, et al., 1981);
- (4) Financial analysts' forecasts are more accurate than forecasts of time-series models (Brown and Rozeff, 1978; Collins and Hopwood, 1980).

Operational Definitions

A local currency company (LCC) is defined as a multinational company that designated local currency as its functional currency under FAS52.

A dollar currency company (DCC) is defined as a multinational company that designated the dollar as its functional currency under FAS52.

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

$$APE_{i t} = \left| \frac{F_{i t} - A_{i t}}{A_{i t}} \right| \times 100$$

where:

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

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

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

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

Research Design

The selection of appropriate research design is influenced by the factors that can offer alternative explanations. Elliot and Philbrick (1990) employ tests using a firm as its own control in a matched-pairs design to control for industry and firm specific factors. However, in studies involving multinationals, factors other than firm and industry may affect forecast accuracy (e.g., foreign exchange risk). Hence to avoid erroneously attributing altered/unaltered forecast accuracy to foreign currency translation method change, when in fact, "non change" multinationals experienced nearly identical/widely disparate alterations in forecast accuracy over the same time period, a sample of DCCs (control group) is employed. Since the control group (DCCs) designates dollars as functional currency, the change in translation method from FAS8 to FAS52 is not expected to have a material impact on their financial results. Hence, the year of FAS52 adoption by DCCs becomes irrelevant.

Study Period

Because of the potential impact of the timing of the adoption decision on the accuracy of the financial analysts' earnings forecasts, this study covers three time periods. For 1981 adopters, the study period is 1980-1982; for 1982 adopters, the study period is 1981-1983; and for 1983 adopters, the study period is 1982-1984.

Statistical Hypothesis

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

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

H1 Parallelism Hypothesis (firm type by year interaction effect), H2 Levels Hypothesis (firm type main effect), and H3 Flatness Hypothesis (year main effect).

H1: The profiles for LCCs and DCCs are parallel.

To test the parallelism hypothesis, the differences between adjacent repeated measures are obtained for each company, that is, the difference between forecast accuracy in 1980 and 1981, between 1981 and 1982, and so forth. The obtained difference scores are then substituted as dependent variables in a two sample T^2 -analysis.

H2: The profiles for LCCs and DCCs are at the same level.

Assuming H1 is tenable, this hypothesis is tested by computing the usual two-sample t-statistic.

H3: The "pooled" profile for LCCs and DCCs combined is perfectly flat (parallel horizontal lines).

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

Sample Selection

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

- (1) Inclusion in 1981-1983 Volumes of Accounting Trends and Techniques (AT&T);
- (2) Fiscal year ending on December 31;
- (3) Inclusion in the Value Line Investment Survey and Value Line Data Base II; and
- (4) Had annual reports or 10-K filings available on microfiche.

Requirement one was needed to identify the adoption year, in order to assign companies to 1981 adopter subsample, 1982 adopter subsample, and 1983 adopter subsample. Requirement two was needed to guarantee uniformity of cross-sectional and intratemporal comparisons. Requirement three was needed to insure ready access to forecast/actual data. Requirement four was needed to identify the functional currency in order to assign the sample companies to LCC group or DCC group.

The effect on sample size of the sample selection criteria are summarized in Table 1.

TABLE 1
Firms Included in the Sample

	Adoption Year		
	1981	1982	1983
Firms reporting change from FAS8 to FAS52 in AT&T	141	167	64
Less: firms with non-December 31 fiscal year	<6>	<67>	<19>
Less: firms with missing data on: Value Line Investment Survey	<9>	<4>	<2>
Annual report or 10-K filings	<10>	<2>	<1>
Value Line Data Base II (e.g. acquired or merged in year after adoption)	<7>	<5>	<3>
Firms included in the sample	<u>109</u>	<u>83</u>	<u>39</u>
Local currency firms (LCCs)	104	74	28
Dollar currency firms (DCCs)	5	9	11
Firms included in the sample	<u>109</u>	<u>83</u>	<u>39</u>

Data Collection

Part I (Summary of Advice and Index) of the Value Line Investment Survey provides per share earnings estimates by Value Line's analysts for the 12-month period ending during the calendar quarter three to six months ahead for all companies on the Value Line Data Base-II. This study employs forecasts reported in the last issue of the third quarter of each year.

Actual earnings per share (EPS) are primary EPS which exclude extraordinary items and special charges/credits, as contained in the Value Line Data Base-II. Forecast data are adjusted, if necessary, for changes in capitalization and stock dividends and stock splits.

III. Results

MANOVA procedures are employed to perform separate profile analysis of 1981 adopter subsample, 1982 adopter subsample, and 1983 adopter subsample.

Table 2 presents a complete summary of means and standard deviations of forecast errors for all companies included in this study.

Due to the small size of the control group (DCCs) and to make comparisons more uniform, the same DCCs are used in separate profile analysis (25 DCCs in all tests). Table 3 provides the results of the profile analysis.

TABLE 2
Descriptive Statistics of Forecast Errors

Period	Local Currency Company LCC						Dollar Currency Company (DDC) (n=25)	
	1981 Adopter (n=104)		1982 Adopter (n=74)		1983 Adopter (n=28)		Mean	S.D.
	Mean	S.D.	Mean	S.D.	Mean	S.D.		
1980	13.55	19.88					9.30	8.41
1981	20.99	28.25	18.22	27.05			14.86	22.29
1982	30.64	34.35	26.65	34.55	31.59	38.84	31.70	38.78
1983			26.58	34.33	29.41	36.99	22.12	28.36
1984					17.52	28.72	22.58	32.91

H1 Firm Type By Year Interaction

Table 3 presents the results of firm type by year interaction tests for all three subsamples. Multivariate parallelism hypothesis cannot be rejected at conventional alpha levels (e.g., alpha=0.01 and alpha=0.05). This implies that forecast errors over time (years) are independent of the choice of functional currency (e.g. factors that cause change in forecast error operate the same way on both LCCs and DCCs).

H2 Firm Type Main Effect

Table 3 presents the results of t-test for all three subsamples. The null hypothesis of no difference in the mean forecast errors between LCCs and DCCs cannot be rejected at conventional alpha levels.

H3 Year Main Effect

Table 3 presents the multivariate and univariate test results on year main effect for all three subsamples. This is basically the test of equal forecast errors over time (e.g., forecast error in year before change is equal to the forecast error in year of change, and so on). The multivariate null hypothesis is rejected for 1981 subsample and 1982 subsample. Further from univariate test results, we reject the null hypothesis of no difference in the mean forecast errors for years 80-81, and 81-82. For the periods 82-83 and 83-84 the null hypothesis cannot be rejected at conventional alpha (e.g., alpha = 0.05). These results suggest that (1) earnings forecast accuracy is time dependent, (2) earnings forecast errors fluctuated significantly during the 80-82 period.

TABLE 3
Profile Analysis Results

Subsample	Hypothesis	Test Name	Test Statistic	Statistic Value	Significance
1981 Adopters:					
	H ₁	Hotellings T ²	F(2,126)	.389	.679
	H ₂	T-test	t(127)	.520	.472
	H ₃	Hotellings T ²	F(2,126)	11.332	.000
	Univariate F-tests				
		80-81	F(2,126)	3.903	.050
		81-82	F(2,126)	10.604	.001
1982 Adopters:					
	H ₁	Hotellings T ²	F(2,96)	.669	.515
	H ₂	T-test	t(97)	.030	.862
	H ₃	Hotellings T ²	F(2,96)	4.536	.013
	Univariate F-tests				
		81-82	F(2,96)	8.850	.004
		82-83	F(2,96)	1.104	.296
1983 Adopters:					
	H ₁	Hotellings T ²	F(2,49)	.549	.581
	H ₂	T-test	t(50)	.000	.995
	H ₃	Hotellings T ²	F(2,49)	1.770	.181

IV. Summary and Concluding Comments

This study compares earnings predictability under FAS52 with the earnings predictability under FAS8. The profile analysis of the sample data shows that the change in forecast accuracy was independent of the change in translation method (for example, factors that caused change in forecast error operated the same way on both FAS52 companies and FAS8 companies).

All sample LCCs that adopted FAS52 in 1981, reported an increase in EPS for 1981 as a result of FAS52 adoption. Therefore, consistent with prior research (Ayres, 1986; Brown and Brandi, 1986) this study suggests that instead of facilitating more accurate forecasts of future earnings, FAS52 has become an instrument of earnings management by multinational companies.

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