*Chapter 4*

# Segment Reporting as a part of Financial Reporting — A Critical Analysis

## 4.1. Introduction

The importance of segment information, its justification, benefits etc, have been briefly discussed in chapter 1. In Chapter 2, we have given general regulatory framework of corporate financial reporting in India. This has been followed by an overview of some major international developments in respect of financial reporting including segment reporting in chapter 3. Accordingly, in this chapter the major issues to be dealt with are framed as follows:

(i) Do research findings justify disclosure of segment information? If so, what are the stock market effects of segment information?

(ii) Do the cost of reporting segment information outweighs its benefit?

(iii) Does disclosure of segment information leads to competitive disadvantage of the firm?

(iv) What lessons should we take from international developments in this respect?

(v) How does India compare with the developed countries in the matter of accounting standards concerning segment reporting?

Consequently, the chapter design stands as follows:

● Justification of segment disclosure and its effect on stock markets (Section 4.2);

- Cost of segment disclosures (Section 4.3);

- Indian accounting standard on segment reporting and accounting standard on segment reporting of developed countries (Section 4.4);

- Concluding observations (Section 4.5).

## 4.2. Justification of Segment Disclosure and its Effect on Stock Market

The justification of segment disclosures has been examined using a number of different approaches. Many of the early studies simply asked users whether or not they wanted segment information. This offered some insights, but it has significant limitations (Roberts & Gray, 1995). They include:

(i) If potential users are unfamiliar with segment data, then they are unlikely to be able to assess its usefulness accurately.

(ii) They may have a tendency to overstate the usefulness of segment information, as they have not to bear the cost of such disclosures directly.

All these limitations necessitate conducting of direct tests of usefulness of segment information. Such tests may be classified into three main groups:

(a) *User decision-making tests* — which look at how decisions are affected by segment information.

(b) *Predictive ability tests* — which compare the accuracy of mechanical forecasts of either sales or earnings generated from consolidated information and segment information.

(c) *Stock market reaction tests* — which analyse the effect of disclosure of segment information on stock market. If it can be shown that segment information has an effect on share prices,

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then the information must be useful and the companies should disclose it.

## A. User Decision-Making Test

One of the few studies that examined the actual decisions taken by users was by Baldwin (1984) who looked at financial analysis' forecasts of EPS reported by Value Line in 1969-73. In particular, he examined the forecasts for three types of companies:

(i) Those that disclosed segment data only when required to do so in response to SEC requirement of 1971 ;

(ii) Those that voluntarily disclosed segment data prior to 1971 ; and

(iii) A control group of single segment companies.

The study concluded that accuracy improved and variability decreased for the years starting from 1971 for all three groups, but, significantly in respect of the first group from the year 1971 when they started giving segment information as per SEC requirements. These results imply that the US analysts used LoB disclosures for taking decisions, a conclusion also supported by Garrod and Frost (1989) in the UK. They found that analysts, when presented with segment data, changed their forecasts, which they previously made on the basis of the consolidated data and the latter forecasts were more accurate. Doupnik and Rolfe (1990) conducted an experiment where analysts were given geographic segment data and found that disaggregation of information was beneficial where the segments disclosed were perceived to have different risks profiles.

## B. Predictive ability test

Kinney (1971) was the first to make an attempt to use LoB data for forecasting purposes. He used the following four models :

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1. Consolidated earnings adjusted for the forecasted changes in the domestic GNP ;

2. Linear trend of consolidated earnings – using double exponential smoothing and a smoothing constant of 0.4 ;

3. Expected segment sales × 3 years average consolidated profit ratio (expected segment sales = current sales × expected increase in industry sales) ;

4. Expected Segment Sales × 3 years average segment profit ratio (expected segment sales as in model 3).

It was found that the Model 4 was significantly more accurate than either model 1 or 2 and more accurate (but not significantly so) than model 3.

Collins (1976) selected 96 US companies by the use of random sampling technique. In this study, actual sales and profits and first differences, or, change from one period to the next were compared with forecast for 1968 to 1970 using the following models :

Consolidated models

(i)   Linear regression

(ii)  Strict matriangle or random walk

(iii) Sub-matriangle or random walk with drift

(iv)  Pure mean reversion

(v)   Moving average of pure mean reversion

(vi)  Kinney's double exponential smoothing model

(vii) Kinney's GNP model.

## Segment models

Sales: based upon the expected industry sales of each LoB segment Earnings :

1. Expected segment sales × prior year consolidated profit margin.

2. Expected segment sales × prior year segment profit margin.

For actual sales it was found that the segment model significantly outperformed all the consolidated models, with the exception of the GNP model. For first difference or change in sales, the segment models outperformed all consolidated models except Model 1. For both the level and first difference of earnings, the segmental models were significantly better than all consolidated models. In addition, the use of segment profit margins, led to only a marginal improvement in predictive ability.

In a similar study in the UK, Emmanuel and Pick (1980) found that segment based turnover and earning forecasts were more accurate than the random walk model based on consolidated figures. However, their results differed slightly from the US studies in that the application of segmental profit margin did not lead to even a marginal improvement over forecasts based upon segment sales combined with consolidated profit margin.

Silhan (1983) in an analysis of the effect of segment data on quarterly information, found that the conclusions of Kinney and Collins hold good for both annual and one quarter ahead forecasts.

However, it is important to note in this context that all these studies ignored many company-specific factors, particularly the number of segments reported and the size of the company.

Silhan tried to explore these issues when he used simulated multi-segment companies derived from a number of single industry companies. His main findings are summarized below :

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1. Forecasts were more accurate with these companies with the larger number of segments reported.

2. Gain in predictive power due to the disclosure of segment data was more frequent for smaller companies. This was probably because the growth pattern of smaller companies is less likely to mirror the growth pattern of either the over-all economy or the industry as a whole.

3. The relative superiority of segmental information disclosure also depend on the diversification pattern of the company. If the company is industrially diversified, then the growth rate of that company is expected to be in the line with the growth rate of the over-all economy and then the benefit due to disclosure of segmental information reduces somewhat.

Garrod and Emmannuel (1987) found evidence that the relative success of LoB forecasts did indeed appear to depend upon diversification patterns of companies.

There has been considerably less research on the usefulness of geographical segment data for the prediction purpose. This may be due to the fact that it is relatively difficult to combine geographical data with external data rather than it is to combine LoB data with external data. Lack of precision in geographical disclosure may be another reason, for example, a company that discloses a segment entitled 'Europe' operates in a group of countries where growth rates of the economy, market position etc. are very different from each other. In spite of these factors there has been a few studies which tried to explore the geographical disclosure in both the UK and the USA. In the UK, Roberts (1989) and in the USA, Balkrishnan et al. (1990) conducted two different studies and came to the conclusion that geographic segment based models significantly outperformed the consolidated models.

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## C. Stock market effect

Studies of the stock market effects of segmental information fall into two categories:

(i) the market reaction to segmental disclosure, and

(ii) comparisons of investment decisions made with or without segment information.

## (i) Stock market reaction to segmental disclosure

Simonds and Collins (1978) used analysis of variance to analyse the changes in beta and found that LoB information disclosure had the effect of significantly reducing betas. Very similar results were also found when Collins & Simonds (1979) used a more sophisticated moving beta test.

Another approach is to examine relationship between beta and specific segmental disclosure. Kinney (1972) attempted to study the market assessment of company diversification. He argued that accounting risk is the co-variability of segment returns, which can be proxied by segment earnings. He found that beta and accounting risk were significantly correlated for geographical disclosures. Mohr (1983, 1985) employed an improved methodology to study a similar question. She employed LoB data to estimate the relative investment of companies in each activity and used these weights to compute a weighted beta, which was then regressed upon equity data of 56 companies. She observed that there exists highly significant positive linear relationship between the two measures, especially when industry involvement was measured using asset data.

## (ii) Comparison of investment decisions made with and without segment information

These studies are concerned with comparing the returns contingent upon an investment strategy based solely on consolidated data and those

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based upon segmental data. The first of these studies was by Collins (1975). He examined the performance of security trading rules based on segment forecasting models. In particular, if the earning predicted by the segment models were greater than those elicited from the consolidated models, the trading strategy tested required that the investor purchases the security, and sells it if the result is converse. After testing these trading models, Collins concluded:

"Disclosure of segment revenue data apparently does make a difference. The results suggest that investors were able to utilise the data to anticipate to a large extent, changes in earnings which otherwise would have been unexpected had they relied totally on consolidated data."

Foster (1975) reinforced the above conclusions in a similar study where instead of diversified companies, a sample of insurance companies was considered. Ajinkya (1980) in his study also confirmed the relative superiority of the strategy based on segment information. However, less interest has been shown in the market about the impact of geographical segment data. Senteney and Bazaz (1992) examined the association between unexpected share price changes and changes in annual consolidated earnings and found that the association was weaker after companies disclosed geographic data following SFAS 14. They concluded that explanation for this lay in the better earnings prediction that the market could make once geographic data was available to it.

## 4.3. Cost of Segment Reporting

Although, the empirical evidence clearly establishes the usefulness of segment data, but sometimes it is questioned whether benefits derived from disclosure of segment information outweigh the costs involved in segment disclosures. The controversy usually centres round the following two factors:

(i) Does the cost involved in compiling and processing segment information justifies its inclusion in the financial statements?

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(ii) Does a company lose competitive advantage due to disclosure of segment information?

An endeavour will now be made to examine the validity of the above mentioned criticisms against the disclosure of segment information.

(i) *Cost of compiling and processing of segment information:*

It has sometimes been argued that the costs involved in compiling, processing and disseminating segment information would be stupendous. However, there is no such evidence available regarding the costs of disclosure. Moreover, it may be argued that all companies need internal information for their internal purpose. Therefore it is unlikely that incremental cost of disseminating segment information would be significant and particularly so when the new accounting standards attempt to identify a segment in the same manner as the internal organisation system identifies it.

(ii) *Loss of competitive advantage:*

Another criticism often labelled against segment information disclosure is that disclosure of such information might benefit existing or potential competitors. However, it should be appreciated that if segment information aids competition then that should be considered advantageous to the society as a whole. A further counter to the competitive disadvantage argument is that the segment disclosure is an attempt at tipping the balance back in favour of single segment companies which disclose far more information about their single segment than do any multi-segment companies. Moreover, the argument of competitive disadvantage does not hold much water when all firms with multiple segments are required to disclose similar and identical information.

Therefore, it appears the costs or disadvantages of segment information is often exaggerated and overstated. However, It is to be admitted that in case of a company which is highly integrated, segment

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information may lose much of their significance as segment results in such a case cannot be understood or interpreted In isolation from the rest of the company.

## 4.4. Indian Accounting Standard on Segment Reporting and Accounting Standard on Segment reporting of Developed Countries:

The Indian accounting standard, AS 17 has been discussed in Chapter 2. We have also reviewed the major international standards in the Chapter 3. A close look at the Indian Standard and other major international standards clearly shows that segment reporting in India is of very recent origin. Whereas developed countries have a long history of segment reporting standard, the Indian standard on segment reporting has come into effect only about two years ago from April 1, 2001. The first International Accounting Standard IAS 14 was effective long before as early as from the year 1983. The US still has still longer tradition of Segment Reporting Standard, the SFAS No. 14, the accounting standard on segment reporting was issued by FASB way back in 1976. Both these standards have been changed and modified several times. Currently IAS 14 (Revised) is in force from July, 1998. The new US standard in this respect is SFAS No.131 effective from 1997.

The Indian standard is based primarily on the IASB standard — IAS 14 (Revised). Naturally, almost all the provisions in these two standards are same. The members of the IASC issue standards in their regions in compliance with the IASs to ensure conformity in all material respects subject to local customs, usage, environment and the prevailing law.

However, one encouraging aspect of the Indian standard is that if a segment is identified as a reportable segment in the immediate preceding period because it satisfied the relevant 10% thresholds should continue to be a reportable segment for the current period in spite of its losing reportable segment status due to non-fulfillment of the relevant 10%

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thresholds. Similarly, if a segment is identified for the first time as a reportable segment due to fulfillment of the relevant 10% criteria, then the preceding period data of that segment should also be provided, unless it is impracticable to do so. These additional requirements appear to facilitate comparison of segment data between two periods.

Promulgation of mandatory standards on segment reporting in India is an important benchmark towards transparent corporate reporting. This will also help India to keep pace with the developed countries in the field of financial reporting.

## 4.5. Concluding Observations

The empirical research has established the usefulness of segment information. The disclosure of segment information also benefit the company as well by not only identifying the inefficient unit and pinpointing the reasons for such inefficiency, but the research evidences suggest that disclosure of relevant information lowers the average cost of capital which, give company access to more liquid markets. The prevailing accounting standards of the IASB and the FASB on segment reporting have come out with more wide range of segment information disclosure in the international arena. The standard on segment reporting by the ICAI which became effective on and from 1.4.2001 would likely to open up and broaden the scope of segment information disclosure in India in tune with international segment reporting practices. However, segment reporting in India has taken place in a halting manner. Prior to 2001, there was no accounting standard on segment reporting. The majority of the companies was disclosing the bare minimum segment information as required by the Companies Act. (The requirement of Companies Act regarding segment disclosure has been provided in Chapter 2). Admittedly, even in the international arena segment reporting is in evolutionary process.

It may be argued that apart from mandatory disclosures, there is also need for voluntary disclosure of additional segment information for

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fulfilling the need of the users in order to keep pace with their requirements which may change with time depending on the change in technology, process of dissemination of information and the pace of globalisation. The Jenkins Committee also has acknowledged this need in the context of voluntary disclosure of information when it stated "that further study would provide important additional information to standard setters, regulators and others charged with maintaining and improving the relevance of business reporting."

In the next chapter, we examine the segment reporting practices of some selected public limited companies in India and make an effort to compare how segment reporting practices have changed and improved after implementation of accounting standard on segment reporting, AS 17.