OPERATIONAL EFFICIENCY AND PROFITABILITY IN AUTOMOBILE COMPANIES – AN ANALYSIS

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The evaluation of efficiency or profitability is really a ticklish task. Large companies have not only to measure up to the profitability parameters and working capital standards but also to fulfil social obligations. However, in fulfilling these obligations the profitability of automobile companies is affected. The diverse considerations and objectives influencing the function of automobile companies render an evaluation of their performance specially is difficult. In common parlance the size of a company as represented by its fixed assets and profits is taken as a rough yardstick of its performance. This is obviously unsatisfactory and a broader and more comprehensive scale of assessment is necessary. Keeping all this in view the concept of a composite index has been explored in this study. It is based on certain indictors which will suitably represent the varied aspects of the performance of automobile companies.

Key words – Ratios, Composite Index, Efficiency, Visualized, Operational Efficiency Profitability

INTRODUCTION

Composite Index – Problems and Limitations

The composite index of efficiency visualized to measure the performance of automobile companies will naturally have certain problems and limitations. For example, such an index may not have the smoothness of index numbers of prices and production. The difficulty begins with the meaning attached to the term operational efficiency and in a way the situation is more or less analogous to defining the term capacity in connection with an industrial unit while constructing an index of capacity utilization. There is, in addition, the problem of choosing appropriate indicators of operational efficiency. These indicators must be relevant and quantifiable. It is no use having ethereal indicators for which it may not be possible to collect data. Also the choice of indicators even if based on an expert knowledge of the subject will be subjective to some extent. In as much as experts also differ among themselves, any chosen set of indicators is bound to evoke criticism of one sort or another.

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INDICATORS

A set of nineteen indicators has been chosen for the present study. These indicators can be broadly grouped under four heads, namely, (A) profitability, (B) working capital, (C) fixed assets and (D) social performance.

Under the group of profitability, the following five indicators are taken:

1. Operating Profit
2. Profit after Tax and Investment
3. Return on Capital Employed
4. Profit Margin Ratio
5. Return on Equity Shareholders' Funds

Under the group B, of working capital position, the following seven indicators are taken:

1. Inventory turnover Ratio
2. Inventory to Working Capital Ratio
3. Debtors Turnover Ratio
4. Current Ratio
5. Quick Ratio
6. Working Capital Turnover Ratio
7. Operating Cycle

Under group C, of fixed assets situation, the following five indicators are taken:

1. Net fixed Assets
2. Fixed Assets to Net worth Ratio
3. Fixed Assets (net) to long-term Funds Ratio
4. Sales to Fixed Assets (net) Ratio
5. Ratio of Depreciation to Gross Block

Under group D, of social performance, the following two indicators are taken:

1. Net value Added
2. Application of value Added

The indicators have been chosen keeping in view the availability of requisite information. A notable point about the choice of indicators is that they do not represent

either the first or the final choice. In a way they are the outcome of a series of experiments done with many more indicators, each of which satisfied the broad analytical consideration referred to earlier and hence became eligible for inclusion. Their collective performance is another important aspect and viewed thus some indicators had to be dropped or replaced while a few other were combined or modified otherwise. Yet another point to note is that an indicator which may be considered appropriate today may cease to be so in future. When the variation in an indicator is likely to come to an end for one reason or another, the indicator becomes obsolete and the search for another appropriate indicator has to begin.

A new indicator which becomes relevant on the grounds of policy or other considerations has to be inserted provided data also becomes available for it. Thus the set of indicators once fixed does not become sacrosanct for all times.

DATA

Data required to construct selected indicators for each of the nine automobile companies has been taken from official sources such as annual reports of the companies and pertains to the period from 2004-05 to 2013-14. The automobile companies have been coded suitably and these code numbers are referred to in the results.

METHODOLOGY

Given the basic data needed, there are at least two methods of measuring the indicators for each of the automobile companies included in the study. According to the first method, the measurement is by way of marginal or incremental ratios worked out for the period chosen. For the other method, the average ratios computed for the terminal year of the study period of 2013-14 constitute the matrix of observations.

Both the methods have their merits and limitations. Whereas average ratios represent the levels attained, indicator-wise incremental ratios reflect the directions and related magnitudes of changes in each of the selected indicators during a given period. From the point of view of stability, the average ratio is at times preferred, particularly when either the data used represents flows such as profits, working capital etc which are more volatile or where time intervals involved are relatively short. However, in the present case incremental ratios are particularly relevant since they show the degree of attainment of the objectives which these automobile companies were expected to achieve.

Even when indicators are chosen and the appropriate method of measurement is decided, the problem of adding them up through a weighting diagram remains. The appropriate procedure is to determine the weights of individual indicators according to their individual contributions to operational efficiency. This is one of the most difficult parts of the whole exercise. In the case of a consumer price index, one knows or at least determines the weight which logically should be in proportion to the household expenditure on items which generally go to make up the basket of consumption. In an industrial production index weights are proportional to the value added by the industrial items. Such an obvious choice of weights is not possible in the case of an operational efficiency index.

Under the circumstances, there are two possible approaches to ascertaining the performance of individual companies. They are (a) the simplistic method of ranking and (b) the ranking based on factor scores obtained by the factor analysis technique. In the first approach, equal weights are attached to indicators so that the composite index will be based on total scores obtained for each of the companies by adding their indicator-wise (see statements 4 and 5 for indicator-wise ranks). The second or the more sophisticated method makes use of the technique of factor analysis. Essentially the technique involves resolving the original set of nineteen selected indicators into a much smaller set of factors (generally one or two) which explain a substantial part of the total variance (say 60 to 80 per cent) of all the indicators. In this study the first approach ie the simplistic method of ranking has been followed.

A point which requires special mention in this context is about the application of the simplistic technique to each of the sub-sets of indicators (such as A,B,C and D) rather than to the whole set of nineteen indicators. The rationale of doing so is twofold. First, the ranks of automobile companies under study based on operational efficiency with regard to profitability and their grading with regard to social performance tend to be inversely related. Thus companies scoring higher ranks according to the former are found in the lower range in terms of the latter. Under such circumstances, it is felt that the pooling of all indicators may conceal the substantial degree of divergence that seems to exist among the four groups – A,B,C and D. Applying the simplistic method of analysis to these groups (considering each group as one composite indicator) to get a composite index also does not seem feasible.

A second and perhaps more important consideration is the problem of interpretation of the factors in terms of operational characteristics of automobile companies. The splitting