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FINANCIAL MEASUREMENT OF INVESTMENT CENTRES: A DESCRIPTIVE STUDY

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FINANCIAL MANAGEMENT OF INVESTMENT CENTRES : A DESCRIPTIVE STUDY

PROBLEM

The increase in size, product diversity and geographical dispersity have necessitated many companies in India to adopt a divisionalised form of organisation. This trend towards divisionalisation and the consequent increased decentralisation has brought in its wake a need for an effective system of accountability and control. The top management group who have decentralised specific decision areas to responsible managers below their level require a proper information system to monitor and control their activities. The identification of responsibility centres is one of the important elements in designing such an information and control system. Investment centre refers to a responsibility centre where the manager is evaluated both on the profits he has generated as well as on the investment under his control. A major objective of this study is to describe the current practices in Indian companies with regard to use of investment centres as a tool for planning and control[1]. Based on such a description, we would also attempt to suggest some improvementsin the current practices.

METHODOLOGY

Methodology included both an administration of a questionnaire as well as field interviews in selected companies. The data collection was done in three phases as indicated below:

Phase 1: Since only the large corporations are likely to experience the problems singled out for study, the top 100 companies in the private sector and the top 50 companies in the public sector[2] were chosen as potential sresearch sites.[3] A letter was sent to the Chief Executives of these 150 companies asking them for information on a) whether the company has more than one profit centre, and if so, b) whether the company would like to participate in this study. This phase was intended to select the likely candidates who would provide the kind of information required for this study. We had responses from 105 companies (a 70% response rate). This high response rate may be attributable to a proper identification of the target group, the procedure of mailing the letters directly to the Chief Executives in their personal name, and an increased awareness and interest amongst Indian companies in the use of formal control systems. Table 1 presents a summary profile of the 105 respondents. For

Phase 2, we only contacted the 71 companies which have more than one profit centre since companies where the entire unit is treated as a profit centre is unsuitable for our study.

Phase 2: A detailed questionnaire was sent to the 71 companies selected in phase 1.[4] These questionnaires were sent to the person whose name was suggested by the Chief Executive in his reply for future contact. The questionnaire sought information on the following aspects:

1. Did the company relate the profit made by a profit centre to the capital invested in it? If so, did the company use Return on Investment (ROI) or some other financial measure?

2. How was the 'investment base' defined? Here issues like the following were raised:

   i. Was investment interpreted to mean the total assets or the total assets less current liabilities?

   ii. Was fixed assets included at original cost or at original cost less the accumulated depreciation or at replacement cost?

3. How was 'profit' computed? Here the following issues were raised:

   i. Was the profit calculated before or after income tax?

   ii. Did the company allocate corporate interest expense to investment centres?

4. What were the different financial criteria used to evaluate investment centre managers?

We got back 42 questionnaires (a 60% response rate) out of which 39 were useable.

We further collected data on the annual sales of these 39 companies from their latest Annual Report. The sales figure was used as a proxy for the size of the company. We also classified these companies by their type of ownership (such as family-owned, public sector, etc).

Phase 3: Based on a preliminary analysis of the questionnaire responses, seven companies were selected for field interviews. The head of the Control function (usually designated as Chief Accountant, Finance Director and so on) in each of these companies was interviewed. The interview was open ended, though a list of issues were prepared based on the questionnaire responses. A major objective of these interviews was to elicit more information on the rationale for their current practices.

RESULTS

Use of Investment Centres: Table 2 provides an overall summary of the 39 companies. It may be recalled that these 39 companies have more than one profit centre. Out of these, twelve (or 32.5% of the companies) did not set up more than

one investment centre. Rather the entire company was treated as an investment centre. Conceptually, evaluating a division only on the basis of 'absolute profits' without reference to the assets employed in it can lead to incorrect conclusions about the divisional performance. However, we ascertained from these companies that they control 'investments' and 'profits' in a given division separately. That is, the investments are controlled first at the time of approving the proposals for capital investments and later on a post-completion audit. The divisions were evaluated on an ongoing basis against the yardstick of 'budgeted profits'. We find this procedure of controlling 'profits' and 'investments' separately to be adequate and in any case, it seems to be working well.

27 companies (or 67.5% of the respondents) have set up more than one investment centre. We do not, however, find that the size of the company (expressed in terms of sales) influences the number of investment centres in a company. Again, the type of ownership -- public sector, family-owned companies, multi-national companies and others -- does not affect the use of investment centres (refer to Table 2). Our field interviews reveal that the extent of centralisation to the divisions with regard to investment decisions (both working capital as well as fixed assets)

provide an important input in constituting an investment centre.

<u>ROI Vs. RI</u>: There are several ways to relate profit to investment, two of which have received wide attention in the finance literature. One is the ROI concept where profit is divided by the capital invested. Another approach is known as 'Residual Income' (RI) where a charge equivalent to the cost of capital is applied on the investment base and this charge is deducted from profits. As a tool of motivation and control, RI is superior to ROI. Suppose a company's cost of capital is 12% and a division is currently earning an ROI of 20%. For this division, any proposal which earns an ROI above 12% but below 20% will not be attractive since such proposals will bring down the overall ROI for the division. However, these proposals are attractive to the company since they meet the cut-off criterion of 12%. Thus the use of ROI might motivate a divisional manager to suboptimise the overall profits while optimising his own profits. The use of RI corrects for this situation and will induce divisions to take goal congruent decisions. In spite of the well documented[5] weaknesses of the ROI method, 25 out of the 27 companies (93%) use it as a basis of performance evaluation. Only two companies (7%) have adopted the RI method. The difficulty in computing cost of capital, the practice of not providing for the cost of equity in financial statements

to shareholders, the ease with which ROIs of several divisions can be compared and its easy comprehensibility have been advanced by the interviewed companies as reasons for their use of ROI. We, however, recommend the adoption of RI for performance measurement since it gives the correct signals to the divisions viz., to go in for all projects which will earn the cost of capital to the company. Even if ROI was used, companies should keep in mind its weaknesses while evaluating managers.

We noticed two deficiencies in the existing practices of the 27 companies which need correction. First relates to the allocation of corporate interests to profit centres. 20 out of the 27 companies (74%) made such allocations. These companies then related the profit after tax and interest to the total investment instead of relating it only to the equity capital. Either profit after tax (before interest) should be related to the total capital (debt plus equity) or profit after tax and interest should be related to the equity capital. We recommend the former procedure. The second deficiency relates to the use of multiple financial measures. Ten companies out of the 27 (37%) used several criteria -- ROI, absolute rupee profits, return on sales, and the like -- while evaluating the financial performance of divisions. Such a procedure is likely to suboptimise the system since these criteria can give different and contradictory

signals to divisional managers. For instance, return on sales is an inadequate measure since it neither gives weightage to the volume of sales nor the quantum of profits nor the assets employed; it only considers the margin on sales. The use of ROI in conjunction with return on sales can only result in unnecessary confusion on the part of divisional managers. A single financial measure like RI would suffice.

Investment base: 24 out of the 27 companies (89%) used the 'Net Assets' concept, i.e., fixed assets plus current assets less current liabilities. Field interviews revealed that even though fixed assets are not strictly controllable by the divisions, the fact that the divisional manager has the power to ask for capital is sufficient to justify the inclusion of fixed assets in the investment base. The current assets such as inventory and debtors are usually under the control of the divisions and as such their inclusion is intended to motivate the managers to take their investment decisions keeping in view the overall corporate interest. The reason for deducting current liabilities is to give an indication of the capital provided by the corporation to the division on which it expects it to earn a return.

Of the companies which included fixed assets in the investment base, four used original cost and 19 used Net Book Value (NBV) with one company using replacement cost.

The popularity of the NBV was attributed to the use of original cost less accumulated depreciation in the financial accounts and therefore, the notion that the NBV represents the amount of capital invested in a division. However, use of NBV results in an increased ROI over time even though the true performance might have remained constant since the NBV decreases over time. Replacement cost concept will tide over this and other deficiencies[6] of NBV. However, the replacement cost is difficult to compute and as such, a considerable amount of effort and education might be necessary before this method can be operationalised. For the time being, we would recommend that the companies keep in mind the deficiencies of the NBV method while interpreting divisional statements.

Most of the companies used the investment figure at the beginning of the period in the denominator which implies that the investments added during the period is not expected to earn anything until the beginning of the next period. We find this procedure acceptable since the performance statements are either monthly or quarterly. Only if the period is a year or so, it would be desirable to use an average investment figure.

Most companies calculate ROI on pretax profits since they argued that income tax expense is not controllable by the divisions. This is so since income tax is a corporate function and further the taxable profits could differ from the accounting profits.

CONCLUSION

There has been an increasing trend amongst Indian companies to decentralise and divisionalise. This trend simultaneously requires an efficient and effective system of planning and control. This study has provided some factual data on the current practices in Indian companies with regard to the use of investment centres -- one element in the system of planning and control. We have also attempted to identify the weaknesses in the current practices and made suggestions with a view to overcome them.

* * *

FOOTNOTES

1. Though a few studies have been made in the U.S. on the design and operation of investment centres (Solomon, 1968; Vancil, 1979), no such attempt has been made in India so far.

2. Public sector companies have socio-economic objectives. For the purpose of this study, we sought information from these companies only on the financial criteria they used for performance measurement.

3. These companies were selected base on the Economic Times List of Industrial Giants for the year 1979.

4. The detailed questionnaire was pre-tested on a group of 20 executives who participated in an Executive Development Program at the Indian Institute of Management, Ahmedabad. The questionnaire was further pre-tested on a few companies in Ahmedabad.

5. For a fuller discussion on the conceptual weaknesses in the use of ROI as a tool of control, please refer to Anthony and Dearden (1976), pp. 335-352.

6. Please refer to Anthony and Dearden (1976) pp.335-352 for details.

REFERENCES

1. Anthony, R.N., and Dearden, J. *Management Control Systems : Text and Cases*. Homewood, III: Richard D. Irwin, Inc., 1976.

2. Solomon, D. *Divisional Performance : Measurement and Control*. Homewood, III: Richard D. Irwin, Inc., 1968.

3. Vancil, R. *Decentralisation : Management by Ambiguity*. Financial Executives Research Foundation, Inc., 1979.

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TABLE 1

TYPOLOGY OF COMPANIES RESPONDING
TO ONE PAGE QUESTIONNAIRE

Organized by	One Profit Centre	More than One Profit Centre	TOTAL
Divisions	13	53	66
Depertments	21	18	39
TOTAL	34	71	105

NOTE : 1. A division is an unit which deals with one or more products and which usually has available within it manufacturing, marketing and other departments.

2. A department is an unit responsible for a single function. Examples may be : manufacturing, marketing, etc.

TABLE 2

CALCULATION OF INVESTMENT IN PROFIT CENTRES

Number of Investment Centres	SALES (In Crores of Rupees)				TYPE OF OWNERSHIP				TOTAL
	0-30	30-50	50-100	Greater than 100	Public	Family	MNC	Others	
ONE	5	1	4	2	4	3	3	2	12
GREATER THAN ONE	5	6	10	6	3	6	9	9	27
TOTAL	10	7	14	8	7	9	12	11	39

NOTE : 'MNC' denotes Multi-National Corporation