

## **Introduction**

For the past 30 years, Singapore has made tremendous progress economically and has been a fast growing Newly Industrialising Economy (NIE). OECD has even proclaimed it as an advanced developing nation. Singapore's economic success comes from its well developed infrastructure and industrial-base, strategic geographical location, political stability and a hardworking population. As is well documented<sup>1</sup>, about 27 per cent of Singapore's annual gross national product is derived from the manufacturing industry, while the rest continues to come from trading, financial services, construction, telecommunication, transport services, tourism, hotel and other business sectors.

Over the past decade, Singapore's education scene has also undergone considerable changes. There are now more tertiary institutions like polytechnics, and three degree awarding institutions, namely National University of Singapore, Nanyang Technological University and the recently established Open University. Nanyang Technological University produces about 700 fully qualified accounting graduates a year in a nation of 2.87 million people. Such developments in its education system help to cater for the labour market as the economy expands.

The organised business sector (for our purposes this will mean those firms who would normally employ professional people for specialised positions) has also seen some changes, with the sector continuing to be dominated by multi-national corporations (MNCs) from the US, Japan and Europe. These MNCs are engaged in various activities in Singapore (mainly in manufacturing, trading, hotels and financial services). On the other hand, local businesses are usually, though not exclusively, of small to medium size. However, there are large

organisations such as Singapore Telecom, which has been listed in the Stock Exchange of Singapore since October 1993, the Public Utility Board and the Mass Rapid Transit Corporation. Retail banks are generally( but certainly not exclusively) owned by Singaporeans, especially those with large network of branch operations.

Due to its small manufacturing base, Singapore, as a manufacturing nation, is clearly not comparable to other newly industrialised nations like Taiwan or Korea. Because of this inherent limitation, Singapore has in turn placed strong emphasis on information technology and telecommunications. As a result, it has enabled Singapore to develop into a major financial and trading centre in the East. This is somewhat comparable to Hong Kong, but the latter's manufacturing base is much stronger. On the whole, in designing this study of the management accounting practices of Singapore companies(see more comment on this in the next section) we felt that restricting it to manufacturing companies alone would not be appropriate. The study, therefore, encompasses a variety of industries to give a more meaningful picture.

### **Rationale of this study**

As the economy matures, greater competition would inevitably arise and companies have to be more streamlined to stay in the race. One of the most important tools in improving the efficiency of a company's operation is to employ a management accounting system or concept. Since the previous study by Ghosh *et al*<sup>2,3,4</sup>, the management accounting scene has seen a number of innovations. New concepts such as Activity Based Costing (ABC) and Total Quality Management (TQM), although still in a relatively early stage of development, may very well have had a significant impact on management accounting.

This report is an update on the previous study (Ghosh *et al*, 84/85) and it is hoped that the results of this study would provide a more in-depth understanding on the following aspects: Firstly, the development of management accounting and financial control practices in Singapore companies. Secondly, the relative extent of these practices in MNCs as opposed to locally owned companies. Thirdly, the differences, if any, between companies in various industries with regard to these practices. Finally, longitudinal study of this nature has taken place in the past on this and other areas of investigation. This is because new techniques are coming on stream all the time and their extent of adoption need to be known (for instance, to what extent ABC, a hotly debated management accounting technique, has been adopted by companies in Singapore?). These matters in their togetherness form the objective of this study ie information on the state of art of management accounting in Singapore. However, comparing the results with the previous study (in 84/85) is not of much use because that is what happened in the past and not of current concern. However, some comparative data will be given at the concluding stage.

This study is assisted by the Institute of Certified Public Accountants of Singapore (ICPAS), as was earlier acknowledged. Since ICPAS and the Nanyang Business School of Nanyang Technological University work closely in the education and training of Singapore's accountants, it is hoped that the findings may be helpful in designing future course curricula.

### **Relevant Literature- A Brief Survey**

Ghosh's study in 1984/85 concluded that there was a reasonable level of attainment by Singapore companies in terms of using selected management accounting concepts and techniques. He found, however, that MNCs had an edge over local/regional companies in

terms of using management accounting concepts and that there were some differences in terms of using selected management accounting concepts between small sized and large sized companies.

This study builds on the foundations laid down in the one conducted by Ghosh (84/85). The design of the current questionnaire is an updated version based on that of the previous questionnaire used by Ghosh *et al*, which was in turn influenced by work done by Chiu and Chang<sup>5</sup>, Lin<sup>6</sup>, Imhoff<sup>7</sup>, Lander<sup>8</sup> and Jones<sup>9</sup>. Both surveys, however, were designed with due regard to Singapore's own situation, viz:

- Singapore is still a developing export-orientated nation;
- It is still very dependent on foreign investment;
- Singapore's products are largely exported while many of the consumer goods (including food) are largely imported;
- The degree of sophistication practised by local companies may be different from that of the foreign subsidiaries and
- The accounting profession, though maturing, is relatively young

We also studied the survey done by Drury and Dungale<sup>10</sup> In their study, they investigated the gap between the theory and practice of management accounting. In addition, the issues of transfer pricing and quantitative management techniques are also brought up in their study.

In view of the foregoing discussion, we prepared our questionnaire, which we sent to 650 companies in all industries in Singapore. We addressed them mainly to the chief financial officers of these companies. After discussion with the ICPAS, we designed a relatively simple but comprehensive questionnaire bearing in mind its relevance to Singapore. In particular, we wanted to know the depth to which some of the techniques were used, rather than how many of them were used. It is hoped that this study would provide an up-to-date insight in the area of management accounting practice s in Singapore and its various aspects.

## An Analysis of Survey Results

The respondents to the survey numbered 109 companies which represented a 16.8% response rate. Considering Singapore's small size and economic base and the difficulty in obtaining responses to questionnaire surveys, we believe this response rate is acceptable. A breakdown of how different sectors responded follows:

	No. of respondents	No. of employees	Ave. no. of employees
Manufacturing	39	36,233	929
Trading	24	3,683	153
Banking & Finance	9	4,366	485
Service	9	1,621	180
Property	7	10,560	1,509
Transportation	5	5,347	1,069
Retail	3	721	240
Hotel	1	450	450
Others	12	2,920	243
	109	65,901*	605

\*Represents 4.1% of the employed workforce in Singapore

Manufacturing is somewhat over-represented, but this is inevitable. After all, management accounting originated in manufacturing. In the 1984/85 survey, 42 of the 174 respondents were in the manufacturing sector, with a total of 40,317 employees. The average number above indicates that the quality of response is good; Singapore being a small country, a manufacturing company employing about 1000 is considered quite large. Besides, average responding firm employs 605 employees. Hence, the information obtained from them should be dependable, especially when the survey itself is entirely questionnaire based.

## **Budgets**

106 companies (out of 109 or nearly 97%) said that they used operating budget as one of the main control methods. This compares well with Ghosh *et al* study (84/85) which reported a 95% use. Out of the 106 responding affirmatively, 90 (or nearly 85%) stated that they in fact departmentalised their operating budgets for better control. All the 106 reported that they compared the actual results with the budgets for performance evaluation purposes. In the previous study, 79% of the respondents departmentalised their budgets and 96% of these respondents used them for performance evaluation purposes. On an overall basis, it is fair to assume that the operating budget is an extensively used financial control technique in Singapore companies. The analysis of data did not indicate any significant deviations in practice among the various industry sectors.

## **Long Term Planning**

82 companies (75%) reported that they did undertake some form of long term planning. Banking and transportation companies seem to use more of this (100%) than those in manufacturing (about 85%). 32 companies (out of 82) seem to use a time frame of less than 3 years and 50 used a time frame of longer than 3 years. This shows that Singapore's companies take a serious view on long term planning for their business operations.

The previous study (Ghosh , 84/85) reported that 68% of the companies used long term planning. The percentages of banking and transportation companies that used long term planning were over 80% while that of the manufacturing companies was about 70%. Fifty seven percent of the companies used a less than 3 years time frame for long term planning while the rest had a more than 3 years time frame.

## **Cash Budgeting**

83 (76%) companies reported that they used some form of cash budgeting. This result is similar to the previous study (Ghosh *et al*, 84/85) where the percentage was 75%. As to be expected, this practice is less prevalent among service industry type companies than others. Industries that have more than 85% of their companies using cash budgeting include retail (100%), hotel (100%) and manufacturing (87%).

## **Periodic Income Statement (for periods shorter than a year)**

All the 109 respondents reported that they prepared periodic income statements, which is the most important( as evident from its extensive use) financial report required by management. In the previous study (Ghosh , 84/85), almost all (99%) of the companies prepared such reports for more than once a year for their internal control purposes.

## **Standard Costing**

Sixtyone (56%) of companies reported that they used standard costing techniques for control purposes. 45 of them (74%) used the techniques fairly extensively, whilst the remaining 26% used them partially. As to be expected, the use of standard costing was more extensive in manufacturing than in other sectors, however, partial use is reported in all other sectors.

On the matter of the frequency of variance reports (not necessarily arising from the use of standard costing, they may well be related to budgets), the following picture emerged :

2 companies - weekly

80 companies - monthly

8 companies - less frequent than monthly

19 companies - did not use

In other words, about 83% of 109 companies prepared (and presumably used) some form of variance reports based on standard costing and/or budgeting. 74 (out of 90) or 82% of the companies reported that they used the variance figures computed for control purposes seriously enough; the rest reported not so serious use (the question was asked in this manner since it is well known that standard cost data are often not well-used in industry). Serious users were mostly among those engaged in manufacturing, trading and banking and finance.

The above results shows that standard costing techniques and variance reports have become more popular among the companies because in the previous study (Ghosh , 84/85), only 16% of the companies used standard costing techniques for control purposes fairly extensively, and another 54% used them partially. Furthermore, only 39% of the companies prepared some form of variance reports based on standard costing, and 60% of those who prepared such variance reports used those figures seriously for control purposes.

### **Activity Based Costing (ABC)**

The areas where standard costing is most commonly used are material, labour and overheads. Besides standard costing, other costing methods such as job costing, process costing and ABC are also being practised by the companies. Among the 14 (or 13%) respondents who practise ABC, the main reason for switching to ABC is that it helps in identifying the activities driving costs. The main benefit is that it helps them to understand their activities and costs better.

This section was not included in the earlier study by Ghosh (84/85), but in other surveys by Price Waterhouse (1991) and Drury (1992), it was reported that only 32% and 3% of the respondents respectively had ABC in place. This shows that ABC is still at its infancy and that not all companies have accepted the need for ABC style analysis. The finding is similar to a UK study by Drury.

### **Total Quality Management (TQM)**

Many of the companies have placed greater emphasis on their quality management. 52 out of 109 (48%) respondents practice TQM. The most common techniques employed in TQM are TQC, followed by MRP, QCC and JIT. The adoption of TQM has presumably helped the respondents to meet competition effectively, reduce costs, increase sales and provide effective sales support. In addition, about 63% (33 out of 52) has obtained ISO9000 Certificate. As TQM is a recent phenomenon, this section was not included in the earlier study by Ghosh (84/85).

### **Break-Even Analysis**

72 companies (66%) reported using the break-even analysis. This is an improvement from the previous study (Ghosh *et al*, 84/85) where it was found that 55% of the companies used this technique.

### **Return on Investment Measurement**

Sixtyone (56% of the companies responding to the survey) companies reported using ROI as a management control technique. Out of this 61, 13 used gross investment as the base,

22 used net asset, 26 used share capital and reserves as the base, and 6 of them used other unspecified bases. 29 (48%) reported that ROI calculations were made on a divisionalised /departmentalised basis. In the previous study (Ghosh *et al*, 84/85), it was reported that 63% of the companies used ROI, with 45% of them also used it at a division/department level. The 2 most common bases used then for the calculation of ROI were gross investment (45%) and net investment (44%).

### **Capital Budgeting**

Ninetyone (83%) reported having major submission requirements before any major capital expenditures were authorised. This compares well with the previous study (Ghosh *et al*, 84/85), where 80% of the companies had major submission requirements, with 61% of them taking both qualitative and quantitative factors into account. The two surveys also showed that in preparing these submissions, both quantitative (like cash flow analysis, NPV, IRR and project BEP) and qualitative factors were taken account. In addition, the influence of the person making the request also played a role (for trust in the matter of committing resources on a long term basis will be a deciding factor, especially in an Asian context.)

### **Transfer Pricing**

Transfer price is the price at which goods or services are traded between organisation subunits. It creates revenue for the selling subunit and a cost for the purchasing subunit. There are several different types of transfer pricing methods, but ideally, the chosen method should lead each subunit to make optimal decisions for the organisation as a whole. Some of the more common transfer pricing methods are shown below:

### Transfer Pricing methods used by Singapore and UK companies

	Singapore Study **	UK Study (Drury)*
	%	%
Full Cost	32	51
Market Price	30	48
Negotiated Price	25	79
Variable Cost	8	21

\*Some of the respondents reported that they use more than one method.

\*\* These percentage do not necessarily add up to 100%. They are reproduced for comparative information purposes only which may be of interest to some readers.

About 49% of the respondents stated that they practise transfer pricing. From the table above, full cost and market price are the two most widely used transfer pricing methods among the Singapore companies. UK companies seem to prefer negotiated transfer price over the other methods, according to a survey done by Drury. (This section was not included in the earlier study by Ghosh *et al*, 84/85).

### **Quantitative Methods**

Quantitative techniques, introduced essentially in the 1970s, are used for budget setting, transfer pricing, long term planning and operation management. However, many companies do not use such techniques as these techniques require a lot of information, some of them difficult to obtain( eg precise definition of limiting factors). The companies find that

the cost of obtaining such information outweighs the benefits from using these complex techniques.

Quantitative Methods used by Singapore and UK companies

	Singapore Study *	UK Study (Drury)
	%	%
Statistical Models	40	51
Inventory Models	32	67
Learning Curve Analysis	26	64
Linear Programming	16	37

\*Some of the respondents reported that they use a combination of these models. The percentages do not necessarily add up to 100%. The above information is reproduced for comparative purposes only.

Fiftyone percent(51%) of the respondents reported that they used at least one of the 4 quantitative techniques mentioned above. From the table above, however, we can see that the use of such quantitative techniques by the Singapore companies is still less than that of their UK counterparts. (This section was not included in the earlier study by Ghosh *et al*, 84/85.)

**Overall Adequacy of Internal Control System**

Seventythree companies (67%) felt that there is sufficient use of management accounting systems in their companies. This is a drop from the earlier study (Ghosh *et al*, 84/85) which reported that 82 % of the companies were satisfied with their internal control systems. From the survey, we also know that many expressed a need for a better internal accounting methods. Among the areas of weakness cited are that management accounting

trails financial accounting (30%)( meaning management accounting generally depends on data collected for financial accounting purposes) and that there is considerable gap between theory and practice (35%). This is in line with the findings of Drury in his UK survey in 1992. One plausible reason for this is that the theory fails to address the reality faced by practitioners. Drury and Dugdale recommend that existing concepts and techniques should be constantly updated and made available to practitioners. Furthermore, practitioners must have sound understanding of theory so that their accounting system can be adapted/updated. This would help them to be aware of and avoid any conceptual weakness of the techniques they used. Finally, practitioners and academic accountants need to cooperate with each other to reduce the gap and to derive mutual benefits from such closer cooperation.

### **Ranking Of Management Accounting Techniques Used (Discussed earlier)**

	Rank	Used	%	Did Not Use	%	Total	Ranking in 84/85 study in S'pore
Periodic Income Statement	1	109	100	0	0	109	1
Budget	2	106	97	3	3	109	2
Capital Budgeting	3	91	83	18	17	109	3
Cash Budgeting	4	83	76	26	24	109	4
Long Term Planning	5	82	75	27	25	109	5
Break-even Analysis	6	72	66	37	34	109	7
ROI	7	61	56	48	44	109	6
Standard Costing	7	61	56	48	44	109	8
Quantitative Techniques	9	56	51	53	49	109	-
Transfer Pricing	10	53	49	56	51	109	-
TQM	11	52	48	57	52	109	-
ABC	12	14	13	95	87	109	-

It is remarkable to note that while TQM was used by 52 companies, ABC was used by only 14 out of 109 companies in the sample. This finding is in line with what had been reported elsewhere. ABC's claims to fame are in question.

## **Conclusion**

In conclusion, with respect to the study done by Ghosh (84/85), the management *accounting practices of the Singapore companies have generally improved. An implied hypothesis of this paper to find out if such was indeed the case. The answer is in the affirmative.* More companies are employing the various accounting techniques (such as cash budgeting and ROI) to help them to manage the business affairs more efficiently. New techniques such as TQM and, to a lesser extent, ABC are also slowly being accepted and used by the local companies. *Another implied hypothesis was to test if MNCs continued to enjoy an edge over local/regional companies in their use of management accounting practices. The answer is yes, again. At a later paper we would investigate if there was any response bias in this respect, especially as there is evidence that MNCs are somewhat over-represented in the sample.*

The survey questionnaire was addressed to only those companies who employed at least one qualified member of the ICPAS. This probably means (average responding firm employed over 600 employees, generally considered a large-sized company in the Singapore context) that our sample represents only medium to large companies in Singapore. We suspect that in smaller organisations the financial control practice will be considerably weaker. A vast majority of Singapore companies are small because the economic base of our country is small.

Though the survey results indicate a reasonable level of achievement by Singapore companies in terms of management accounting practices, there were limitations concerning the validity of responses and the representation of the response set, common problems of mail surveys. This is expressly acknowledged. Within these limitations, the survey results reflect the Singapore situation fairly well. Non-response rate was high, as is common in Singapore academic surveys. Tests for non-response bias will probably not indicate anything useful in a Singapore context. Non-response to mail survey is common enough experience in Singapore; what response we managed to get was only after reminders.

## **References**

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