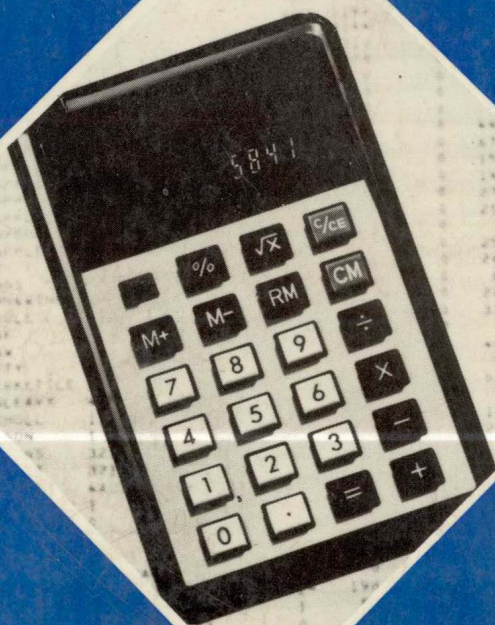


David C. Asch

Cost Accounting and Budgeting



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The M & E BECBOOK Series

Cost Accounting and Budgeting

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Preface

This textbook has been designed to provide a thorough understanding of the principles and methods on which cost accounting is based. Detailed coverage is provided of the principles, techniques, and methods involved in cost accountancy and budgeting.

The first part of the book provides a comprehensive description of the aims, techniques and methods of cost accounting in relation to the collection, analysis and ascertainment of costs. The use of cost information for budgeting, control and decision-making is given concentrated attention in the second part of the book as is the impact of inflation on costs.

Each chapter ends with a selection of self-assessment questions, the answers to which can be checked in the text. Each chapter also has one or more examination-type questions with a suggested solution in the appendix. Most of these questions have been drawn from past professional foundation examinations and have been selected not just to test knowledge gained from each chapter but also to extend understanding. As such, they should be considered part of the book.

Designed to meet the requirements of the BEC National Accounting Technicians option module 11, the book is also suitable for first-year BEC Higher National Certificate and Diploma courses. It is also suitable as an introductory text for foundation degree and general business studies courses.

I would like to thank the Institute of Cost and Management Accountants (ICMA) and Association of Certified Accountants (ACCA) for giving their permission to reproduce past examination questions. The definitions and terminology used in this book are based on the *Terminology of Management and Financial Accountancy* published by the ICMA and reproduced with their kind permission.

Both Mrs B. Thompson and Mrs I. Brameld have proved to be excellent typists in managing to cope with my scribbled drafts which they transformed into a manuscript.

I am deeply indebted to my wife without whose support, encouragement and understanding this textbook would not have been completed.

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CHAPTER ONE

Introduction

CHAPTER OBJECTIVES

After studying this chapter you should be able to:

- * understand the objectives of cost accounting and its role in an organisation;
- * explain how cost data is collected; and
- * understand the difference between direct and indirect costs, and fixed and variable costs.

THE NEED FOR INFORMATION

Organisations, whether privately or publicly owned, need to make the best use of their resources. The effectiveness of the utilisation of scarce resources could be made in quantitative terms such as the number of tonnes or kilograms of minerals extracted from a mine. However, this would not necessarily provide a usable comparison due to the problems of measuring the resources used in the process like land, machinery, labour and so on. The evaluation of the use of different economic factors is facilitated by the use of a common measure—money. In this way the cost of inputs is compared with the value of the output, and by recording monetary values the accountant is able to measure the results of activity, and present that information to those directing activities. In fact the success or failure of an enterprise may well depend on the measurement and recording of its activities because this will enable management to concentrate on those areas which require their attention.

Accounting covers three main areas: (a) financial accounting; (b) cost accounting, and (c) management accounting. In order to put cost accounting into perspective it is necessary to consider the main functions of financial and management accounting as they are all dependent on each other.

DIFFERENT KINDS OF ACCOUNTING

Financial accounting

Financial accounting is primarily concerned with recording transactions between a firm and third parties such as suppliers, employees, customers and others to or from whom money is received or paid.

The ascertainment of the profit of a business as a whole, and its financial situation by the preparation of accounts are also the responsibility of the financial accountant. Annual accounts are presented to the shareholders, so reporting on past events, as part of the stewardship function of the company's management. In fulfilling these two main functions the financial accountant can refer, or is obliged to consider, the effect of company law and recommendations of the major accountancy bodies.

Cost accounting

Cost accounting uses the information provided by the financial accounting system together with much more detail of the internal operations of the enterprise. The cost accountant will use data in both monetary and non-monetary forms, for example quantity of materials used, products manufactured, hours worked, etc. His main objective is to ascertain the actual cost of products, operations, and departments. Cost accounting makes available cost data by operating a cost recording system. When this information is available it is often compared with an estimated or predetermined cost.

Management accounting

Management accounting uses both cost and financial information to advise management in planning and controlling the organisation. In fact management accounting evolved out of cost accounting and the two are still closely linked. It is vital, therefore, that the management accountant is familiar with the costing systems in use because if there are any shortcomings in the information he uses then the advice given to management may be misleading.

PURPOSE OF COST ACCOUNTING

It is the function of managers to manage those organisations, or parts of organisations, that are under their control. In order to carry out this function effectively information relating to all the relevant factors must be available. One of these factors is cost and it is the purpose of costing to provide management with information relating to costs. Therefore costs are prepared for management to assist them in their function and not merely for the sake of preparing information. Obviously cost is not the only factor that managers should consider in running a department or firm, but a manager can be more effective when using the best information it is possible to obtain.

Costing systems should aim at presenting managers with the

information they need to manage effectively. This information should indicate the economic implications and consequences of their decisions even though, in some instances, the final decision may be made on other than economic grounds. Before considering costing in detail it is probably of use at this point to summarise the purposes of costing as these should be kept in mind throughout. The list is not exhaustive as each firm will have advantages arising from its own system.

(a) *To disclose* profitable and unprofitable activities to enable management to take corrective action as required.

(b) *To provide* information for comparison of costs.

(c) *To analyse* expenses incurred so that wastage can be traced and economies effected.

(d) *To indicate* the precise nature of an increase or decrease in the results disclosed by the financial accounts.

(e) *To provide* information upon which tenders and estimates may be based.

COSTING SYSTEMS

The principles, conventions and objects of all costing systems are the same but their application will of necessity vary in accordance with circumstances. This does not mean, however, that the procedures in a firm must remain unaffected by the introduction of a system of cost accounts as it is quite possible that the installation of a costing system will reveal deficiencies which could adversely affect the accuracy of the costing records. With this reservation it is important to appreciate that the system must be designed to suit the business. Additionally the expense of operating the costing system must be considered in relation to the size of the enterprise and the expected benefits. The system should not be needlessly complex.

Factors in design and installation

The design and installation of a costing system will need to consider the following factors:

(a) *Staff views.* The views and suggestions of technical staff must be given consideration in designing the system as they are dealing with the day-to-day operations which will be recorded and reported on in economic terms. Their advice on the nature of materials used, the incidence of scrapped work and the point at which it is normally recognised, coupled with the deployment of the workforce are invaluable in the design of the system. Furthermore, their

knowledge of the production sequence is vital in establishing the points at which work has begun and finished and where the finished product of one section becomes the input to the next. Finally the managers and foremen will often be responsible for the supervision of data recorded for costing purposes by their clerical and non-clerical staff. They will ultimately use reports prepared from this information, and the system must be seen as an aid to their effective performance since their lack of co-operation may invalidate the results.

(b) *Analysis of costs.* No useful purpose will be served in analysing items of insignificant value. For instance, the total cost of stationery is usually an adequate heading on an expense report with nothing to be gained from ascertaining the separate costs of paper, envelopes, paper clips, pens, etc.

(c) *Group cost accounting.* Where a business is related to others, i.e. as part of a group, there are advantages in adopting common cost accounting practices. The same would apply where a firm belongs to a trade association in that the adoption of common costing practices will facilitate the comparison of the firm's cost data with averages produced for the industry.

(d) *Avoiding duplication.* Cost accounting is part of the overall management information service and care must be exercised to ensure that no duplication in reporting the same information in a different way takes place. Only information which is relevant in the context of assisting management to manage should be reported.

(e) *Aims of a costing system.* The costing system should be flexible and capable of adaptation to changing circumstances. It should be logical and simple so that if a member of the costing staff leaves the system does not collapse. Every system requires periodical and skilled scrutiny to avoid the danger of obsolescence due to changes and developments in the business.

(f) *Responsibilities of the cost accountant.* The cost accountant must be fully conversant with the areas within the business where large costs are incurred because his attention will often be focused on these areas in assisting management to control and reduce costs. It is his responsibility to advise managers of those areas where their concentrated efforts will be most effective. The cost accountant should not merely record data, but as a part of the management team, he must ensure that his function has an influence within the organisation.

COST CLASSIFICATION

The financial accounts of a firm are designed to disclose the results

of the firm as a whole and in respect of a definite period. The main items of income and expenditure are shown in the accounts under headings which describe their nature, for example sales, purchases, wages, rent, etc. However detailed these statements are they only reveal the result of the activities of the firm as a whole. No detailed information is available as to the manner in which the net profit or loss has been made.

Total turnover may well be made up of many varied products, services, jobs or contracts, only some of which may be profitable. Considerable benefit will be derived from statements which reveal the separate result of each activity, while at the same time detailing how such a result has eventuated. The amount of analysis performed will be dependent upon the nature of the business and the degree of accuracy required. Ultimately expenditure will be charged to "cost units". A "cost unit" can be defined as a unit of quantity of produce, service or time in relation to which costs may be ascertained.

A cost unit should not be confused with a "cost centre" which is usually an intermediate point to which expenditure can be charged for later distribution, if necessary, to cost units. Cost units and cost centres should be those natural to the business which are readily understood and accepted by all concerned. In order to facilitate the charging of costs to cost units it is normally necessary to divide the business into logical parts which are convenient for accumulating costs for subsequent distribution. This will also permit the cost of identifiable activities and departments to be disclosed so assisting in relating costs to the manager concerned. These sections of the business are "cost centres", which can be defined as a location, item of equipment, or person (or group of these) in respect of which costs may be ascertained and related to cost units.

The classification of costs is the basis of all costing systems and is an essential step in summarising detailed costs. Costs can be classified by functions:

- (a) production;
- (b) sales marketing;
- (c) administration; and
- (d) research and development.

Within functions, costs are collected by cost centres and within cost centres by cost units. Costs collected in cost centres or cost units can be further classified into cost elements:

- (a) *material cost*; this is the cost of goods used by a firm;
- (b) *labour cost*; this is the cost of remuneration of the firm's

employees (including wages, salaries, bonuses, commissions, national insurance etc.); and

(c) *expenses*; these are the cost of services used by the firm such as rates and water.

These elements can be further classified depending on whether they are (a) *direct* or (b) *indirect* costs, i.e. direct or indirect material.

A direct cost is one which can be allocated directly to a cost centre or cost unit. The cost can be directly associated with the production of a cost unit or with the activity of a cost centre. An indirect cost cannot be directly associated with the production of a cost unit or the activity of a cost centre, but has to be apportioned to the cost centre or absorbed by the cost unit on a suitable basis. Direct expenditure which can be directly identified with a cost centre or cost unit is allocated, whereas indirect expenditure is apportioned or absorbed.

Direct materials, direct labour, and direct expenses are prime costs which are directly related to the production of a cost unit or the activity of a cost centre. The sum of these direct costs for a period is known as the *prime cost of production*. The indirect costs of production, and all selling, distribution, research and development, and administration costs are often known as *overheads*. Ultimately all overheads that have been apportioned to cost centres have to be absorbed by cost units. Overhead absorption is usually achieved by the use of one or a combination of overhead rates, for example labour hour rate, or machine hour rate.

Overhead costs may be either (a) *fixed* costs or (b) *variable* costs, though some costs may have fixed and variable elements and are called (c) *semi-variable*. A fixed cost is one which remains unchanged despite changes in activity; it is a cost of time in that it accumulates with the passage of time, e.g. rent, office salaries, insurance, etc. A fixed cost is not always fixed in amount as other factors, such as price-level changes, can cause fixed costs to change from period to period. If a sufficiently long time-period is considered, virtually all costs become variable due to changes in the scale of the firm's operations. A variable overhead cost will tend to vary with changes in activity, but cannot be allocated directly to a cost unit and has to be absorbed on a suitable basis. Theoretically all prime costs are variable costs because their distinguishing characteristic is the fact that they can be directly related to cost units. In practice this may not necessarily be the case.

Total cost is the sum of prime costs and overheads attributable to the cost unit being considered. The unit may be the whole

undertaking, a job, batch, contract, or product group. It may be a process or a service. Total cost can be made up as follows:

	£	£
DIRECT COSTS		
Material	4	
Labour	6	
Expense	<u>1</u>	
PRIME COST		11
OVERHEAD COSTS*		
Production overheads		
Indirect material	1	
Indirect labour	3	
Indirect expense	<u>2</u>	
		6
COST OF PRODUCTION		<u>17</u>
Sales/marketing expenses	2	
Research and development costs	1	
Administration expenses	<u>3</u>	
		6
TOTAL COST		<u><u>£23</u></u>

(* Individual items of overhead cost may be either fixed, variable or semi-variable in nature)

COSTING METHODS

Most industrial and commercial firms can be grouped together in that all the firms in a group will be involved in similar work processes having similar production and control problems. As a result methods have been developed which are of use in formulating a costing system for a particular business.

Industry can be grouped into two basic types: (a) businesses that manufacture identical products, i.e. gas, bread, bricks, etc., and (b) those which manufacture related but different products, i.e. special-purpose machines, etc. There are, therefore, two basic costing methods: (a) *specific order costing* and (b) *process costing*.

Specific order costing

Specific order costing is applicable where the work consists of separate contracts, jobs or batches, each of which is authorised by an order or contract. For example, in a jobbing business work proceeding through the factory can be clearly identified. Usually raw material is issued at the start and is physically moved from one department to another while a variety of operations are performed in transforming the material input into the finished product. The identifiable direct costs are charged direct to the order together with a share of the indirect costs. In some instances the nature of the

business requires the operations to be performed outside the factory and each order is of a relatively long duration, e.g. house building and ship construction. The basic principles of job costing still apply but with certain distinguishing features. Costing for construction contracts is normally known as contract costing.

To reduce set-up costs and make better use of available capacity it is beneficial to have as long a production run as possible. This emphasises standardisation of products, or if this is not feasible, the standardisation of component parts. In such cases batch costing is used, where a batch of identical components or products are treated as a job and costed as such. The total cost of the batch is then averaged over the number of components or products.

Process costing

Process costing is the method applicable where standardised goods or services result from a sequence of repetitive or continuous operations or processes to which costs are charged before being averaged over the units produced during the period. It is possible, therefore, to total all the costs of the factory and divide that total by the units produced to arrive at a unit cost. There is not normally the problem of direct and indirect costs that may arise with specific order costing. Where the business, or a department within a firm, provide services it is known as service costing.

Techniques for collecting cost data

Specific order costing and process costing are mainly concerned with the collection and assembly of cost data. For useful management information to emerge some established techniques are available which have been devised to suit the purpose for which the information is required. Much of this book is concerned with explaining the purposes and applications of the techniques but at this stage a general understanding of the meaning of the terms is adequate. The main terms can be defined as follows.

Absorption costing

Absorption costing is a technique whereby both fixed and variable costs are charged to cost units. The term is applicable whether production costs only or costs of all functions are charged to the units produced.

Marginal costing

Marginal costing is a technique whereby only variable costs are charged to cost units. Fixed costs attributable to a relevant period being written off in full against the contribution for that period.

Actual cost ascertainment

Actual cost ascertainment is a technique under which, subject to certain approximations, costs of cost centres and cost units are ascertained, and these are deemed to represent actual costs.

Budgetary control

Budgetary control is the establishment of budgets relating to the responsibilities of managers to the requirements of a policy, and the continuous comparison of actual with budgeted results, either to secure by individual action the objective of that policy, or to provide a basis for its revision.

Standard costing

Standard costing is the preparation of standard costs of products and services.

Variance accounting

Variance accounting is a technique whereby the planned activities of an undertaking are expressed in budgets, standard costs, standard selling prices, and standard profit margins, and the differences between these and comparable actual results are accounted for. Management is periodically presented with an analysis of differences by causes and responsibility centres, such analysis usually commencing with the operating profit variance.

Variance analysis

Variance analysis is that part of variance accounting which relates to the analysis into constituent parts of variances between planned and actual performance.

Differential costing

Differential costing is a technique used in the preparation of *ad hoc* information in which only cost and income differences between alternative courses of action are taken into consideration.

Incremental costing

Incremental costing is a technique used in the preparation of *ad hoc* information where consideration is given to a range of graduated changes in the level or nature of activity. The additional costs and revenues likely to result from each degree of change are presented.

SELF-ASSESSMENT QUESTIONS

Questions 1 to 3 can be answered from the text.

1. Briefly explain the relationship between costing, management accounting and financial accounting.

2. Define each of the following giving an illustrative example in each case: (a) direct cost; (b) indirect cost; (c) cost centre; and (d) cost allocation and cost apportionment.

3. Describe the essential features of a costing system.

The answers to questions 4 and 5 are at the back of the book (see Appendix, p. 228).

4. A manufacturing company produces three products in two departments. It has 60 employees, 20 of whom work in the machining department, 30 in the assembly department and ten are management and staff.

The managing director owns the business which he founded three years ago with only five employees. He is an engineer by training and has relied on the auditors to prepare half-yearly trading and profit statements and balance sheets. These he has received ten weeks after the end of each half year. The managing director is considering installing a cost accounting system. He has asked you to prepare a report to: (a) describe briefly the main aims of the cost accounting system; (b) list six specific types of information which could be obtained from the system, that cannot be obtained from the half-yearly accounts now prepared by the auditors, which would be of significant help to him in running the business. You are required to write the report. (ICMA)

5. You have recently been appointed accountant to a general engineering firm engaged in the production of special purpose machines. Orders are obtained by the firm's technical representatives who, having ascertained customers' needs, provide the necessary information to the estimator who prepares and submits the required quotation.

Recent trading results have been unsatisfactory, and the management feel that a costing system would provide greater opportunity for control and would help to improve the firm's profitability. You have been requested to install a suitable costing system. How would you proceed?

(ACCA)