



3

The Analysis of Overhead

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3

LEARNING OUTCOMES

After completing this chapter, you should be able to:

- ▶ prepare cost statements for allocation and apportionment of overheads, including between reciprocal service departments;
- ▶ calculate direct, variable and full costs of products, services and activities using overhead absorption rates to trace indirect costs to cost units;
- ▶ explain the use of cost information in pricing decisions, including marginal cost pricing and the calculation of 'full cost' based prices to generate a specified return on sales or investment.

3.1 Introduction

In this chapter you will learn about the analysis of indirect costs or overheads. We will be looking at the three stage process of attributing overheads to individual cost units: allocation, apportionment and absorption.

You will need a thorough understanding of the contents of this chapter for your studies of the *Fundamentals of Management Accounting* syllabus and for many of the syllabuses at later stages in the CIMA examinations.

3.2 What is an overhead cost?

3.2.1 Definition

An overhead cost is defined in the CIMA *Terminology* as 'expenditure on labour, materials or services that cannot be economically identified with a specific saleable cost unit'.

Overhead costs are also referred to as *indirect costs* which we discussed in Chapter 1. Therefore, overhead cost comprises indirect material, indirect labour and indirect expenses. The indirect nature of overheads means that they need to be 'shared out' among the cost units as fairly and as accurately as possible.

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In this chapter, you will be learning how this ‘sharing out’, or *attribution*, is accomplished for production overheads, using a costing method known as *absorption costing*.

One of the main reasons for absorbing overheads into the cost of units is for inventory (stock) valuation purposes. Accounting standards recommend that inventory valuations should include an element of fixed production overheads incurred in the normal course of business. We therefore have to find a fair way of sharing out the fixed production overhead costs among the units produced.

3.2.2 Functional analysis of overhead costs

Overhead costs may be classified according to the function of the organisation responsible for incurring the cost. Examples of overhead cost classifications include production overhead, selling and distribution overhead, and administration overhead. It is usually possible to classify the majority of overhead cost in this way, but some overhead costs relate to the organisation generally and may be referred to as general overhead.

In this chapter we shall focus mainly on production overhead. Production is that function of the business which converts raw materials into the organisation’s finished product. The production department is usually divided into a number of departments or cost centres. Some of these cost centres are directly involved with the production process. These are called *production cost centres* and might include, for example, the cutting department and the finishing department.

Other cost centres in the production department are not directly involved with the production process but provide support services for the production cost centres. These are called *service cost centres*, and examples include the maintenance department and the stores.

3.3 Overhead allocation and apportionment

The first stage in the analysis of production overheads is the selection of appropriate cost centres. The selection will depend on a number of factors, including the level of control required and the availability of information.

Having selected suitable cost centres, the next stage in the analysis is to determine the overhead cost for each cost centre. This is achieved through the process of allocation and apportionment.

Cost allocation is possible when we can identify a cost as specifically attributable to a particular cost centre. For example the salary of the manager of the packing department can be allocated to the packing department cost centre. It is not necessary to share the salary cost over several different cost centres.

Cost apportionment is necessary when it is not possible to allocate a cost to a specific cost centre. In this case the cost is shared out over two or more cost centres according to the estimated benefit received by each cost centre. As far as possible the basis of apportionment is selected to reflect this benefit received. For example, the cost of rent and rates might be apportioned according to the floor space occupied by each cost centre.

The following example illustrates the allocation and apportionment of production overhead costs.

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Example

The information given below relates to a four-week accounting period of WHW Ltd.

	<i>Machining</i>	<i>Assembly</i>	<i>Finishing</i>	<i>Stores</i>
Area occupied (square metres)	24,000	36,000	16,000	4,000
Plant and equipment at cost (£000)	1,400	200	60	10
Number of employees	400	800	200	20
Direct labour hours	16,000	32,000	4,000	
Direct wages (£)	32,600	67,200	7,200	
Machine hours	32,000	4,000	200	
Number of requisitions on stores	310	1,112	100	
<i>Allocated costs</i>	£	£	£	£
Indirect wages	9,000	15,000	4,000	6,000
Indirect materials	394	1,400	600	
Maintenance	1,400	600	100	
Power	1,600	400	200	
<i>Other costs (in total)</i>	£			
Rent	2,000			
Business rates	600			
Insurance on building	200			
Lighting and heating	400			
Depreciation on plant and equipment	16,700			
Wage-related costs	28,200			
Factory administration and personnel	7,100			
Insurance on plant and equipment	1,670			
Cleaning of factory premises	800			
	<u>57,670</u>			

The data above distinguishes between those costs which can and those which cannot be allocated to a cost centre. The first step is to construct an overhead analysis sheet having separate columns for each cost centre, together with a column for the total costs, a description of the cost item, and the basis upon which the cost has been apportioned between the cost centres if applicable.

An explanation of the apportionment method is given beneath the analysis.

<i>Item</i>	<i>Basis of apportionment</i>	<i>Machining</i> £	<i>Assembly</i> £	<i>Finishing</i> £	<i>Stores</i> £	<i>Total</i> £
Indirect wages	Allocation	9,000	15,000	4,000	6,000	34,000
Indirect materials	Allocation	394	1,400	600	–	2,394
Maintenance	Allocation	1,400	600	100	–	2,100
Power	Allocation	1,600	400	200	–	2,200
Rent	Area occupied	600	900	400	100	2,000
Business rates	Area occupied	180	270	120	30	600
Building insurance	Area occupied	60	90	40	10	200
Lighting/heating	Area occupied	120	180	80	20	400
Depreciation on plant/equip't	Plant/equip't at cost	14,000	2,000	600	100	16,700
Wage-related costs	Total wages	8,320	16,440	2,240	1,200	28,200
Factory admin. and personnel	No. of employees	2,000	4,000	1,000	100	7,100
Insurance on plant/equip't	Plant/equip't at cost	1,400	200	60	10	1,670
Factory cleaning	Area occupied	240	360	160	40	800
		<u>39,314</u>	<u>41,840</u>	<u>9,600</u>	<u>7,610</u>	<u>98,364</u>

Chapter extract

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