

Chapter 07

Statement of Production Cost

This chapter discusses the followings.

- 7.1 Introduction to production cost
- 7.2 Elements of product cost
- 7.3 Calculation of product cost
- 7.4 Preparation of statements on the production costs
- 7.5 Preparation of cost statements using a spread sheets package



7.1 Introduction to production costs

Today there are large number of business organizations that engage in retail businesses as well as manufacturing and trading businesses. Organizations that produce goods for resale purposes are known as manufacturing organizations. The key function of a manufacturing organization is to produce goods and services using the economic resources. Hence, in order to produce a good or service, use of economic resources is a must and such consumption of economic resources essentially involves a cost.

Production cost can be defined as the total production cost that is incurred within a specified period of time.

7.2 Elements of production cost

The production cost can be mainly classified as the direct cost and indirect cost depending on how the cost links with the product or on the nature of the cost. The indirect costs are also known as the production overhead cost. The below given are the elements of production costs.

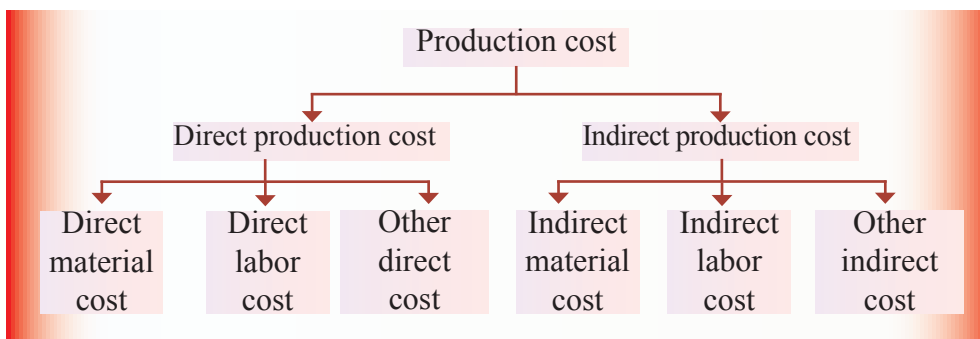


Figure 7.1 Elements of production cost

Direct production cost

The costs that can be directly identified with the unit of production is regarded as the direct cost. These are directly relates to the production of goods.

The direct cost can be identified in three elements

- P Direct material cost
- P Direct labor cost
- P Other direct cost

Direct material cost

Direct material cost is the cost of physical resources that can be directly identified with the unit of production.

Examples:-

Paper and ink used by a book publishing company
The wood that is used in making a wooden table

Direct labor cost

Direct labor cost are the wages that are incurred in order to produce specific goods or to provide specific services to customers. This includes all the payments for the workers who are directly involved in the process of converting the inputs in to outputs.

Examples:-

The salaries for book printing staff
Carpenter cost in making a wooden table

Other direct costs

Direct costs that are incurred in the production of a good other than the direct materials and direct labor is called other direct costs.

Example:-

The royalty payment made to an author of a book

Prime cost

The total of direct materials, direct labor and other direct expenses in producing a product is known as the total direct cost or the prime cost.

$$\text{Prime cost} = \text{Direct material cost} + \text{Direct labor cost} + \text{Other direct cost}$$

Example:-

As per the examples discussed, the prime cost of book printing press can be calculated as follows;

	Rs.
Direct materials (printing papers and Ink)	= XX
Direct labor (wages to printing machine operator)	= XX
Other direct cost (royalties paid to author)	= XX
Prime cost	= <u>XXX</u>

Example:-

Below are the expenses relevant to Ranuka Book Printing Press. Calculate the printing cost using following information.

Printing paper Rs. 40 000

Ink Rs. 5 000

Printing machine operator wages Rs. 15 000

Royalties paid to author (Rs.150 each for 100 books) Rs. 15 000

$$\begin{aligned}\text{Prime cost} &= \text{Direct material cost} + \text{Direct labor cost} + \text{Other direct cost} \\ &= 45\,000 + 15\,000 + 15\,000 \\ &= \underline{\underline{\text{Rs. } 75\,000}}\end{aligned}$$

Indirect production cost (overhead production cost)

Costs that are incurred for the overall production process but cannot directly be identified with a unit of production, is known as production overhead costs. This includes all the production costs except the prime cost.

The elements that identified relating to the production overhead cost are;

- P Indirect materials
- P Indirect labour
- P Other indirect costs

Indirect material cost

The costs that are incurred for materials that cannot be directly recognized with a unit of production is known as the indirect material cost.

Examples:-

Lubricating oil for book printing machines

Expenses incurred for the sand papers in making a table

Indirect labor cost

This is the labor cost incurred for the employees who are not directly involved with the cost of the production.

Example:-

Salaries paid to factory supervisor
Salaries paid to office staff

Other indirect cost

All other indirect costs incurred in the production other than the direct materials and direct labour is known as other indirect cost.

Examples:-

Factory rent
Factory insurance expense

Production overhead cost = Indirect material cost + Indirect labor cost
+ Other indirect cost

Example:-

The production overhead cost can be calculated as follows as per the examples discussed above;

Indirect material cost (Lubricating oil for book printing machines)	=	XX
Indirect labor cost (Salaries for supervisor and office clerk)	=	XX
Other indirect expenses (factory rent, factory insurance)	=	<u>XX</u>
Total production overhead cost	=	<u><u>XXX</u></u>

Example:-

With reference to the Ranuka book printing press, the press has incurred Rs. 12 000 for lubricating oil, Rs. 20 000 for supervising salaries, Rs. 30 000 and Rs. 15 000 for factory rent and insurance.

Accordingly the overhead cost is;

Indirect materials	+	Indirect labour	+	Other indirect cost
= Rs. 12 000		+ Rs. 20 000		+ Rs. 45 000
= Rs. 77 000				

The classification of production cost in to direct and indirect may depend on the decision of the management of the organization.



Activity 01

Classify the given cost below in to direct and indirect

Production	Expense	Direct	Indirect
Shoes	Leather Nails and polish Salary for the shoe maker Machine maintenance cost		
Bread	Wheat flour Water expense Salary to bread baker Salary to watchman		



Activity 02

Piyumal is an established furniture designer. He operates a small furniture designing shop in a rented building. He paints every carving designs well. He has two furniture designers working under him. He also gets a service of a management assistant. The wood that is required for the furniture shop is transported to the business premises by a hired lorry.

01. Make a list of costs that is relevant for the furniture design business and classify them in to direct and indirect.
02. Calculate the prime cost and the overhead cost assuming values for the costs you have identified in (i) above.



Activity 03

Following are the costs relating to a specific month of “Rasameewitha” a sesame rolls (thala karali) manufacturing company

Rs.		Rs.	
Materials cost	80 000	Salaries to watchman	7 000
Labor cost	20 000	Expenses for flavors	1 500
Packing cost	4 000	Electricity	1 500
Factory rent	11 000	Maintenance of machinery	5 000

Calculate the prime cost and the overhead cost using the above information.

7.3 Calculation of production cost

Total production cost

The total cost incurred for producing a specific good is known as the total production cost.

$$\text{Total production cost} = \text{Prime cost} + \text{Production overhead cost}$$

Per unit production cost

Cost relating to a unit of product is known as the per unit production cost. Per unit cost of production is calculated as follows:

$$\text{Per unit cost} = \frac{\text{Total production cost}}{\text{Total number of units produced}}$$

Per unit profit margin

When a manufacturing organization manufactures a product, they present the product to the market by adding a specific margin to its cost. This specific margin is termed as the “profit margin”. When deciding on the profit margin, the customer attractiveness and the impact on the company's going concern have to be considered.

If the profit margin is high, the price of the product will be high and accordingly the customer demand for the product will decrease.

When the profit margin is set low, the price of the product will decrease and the customer demand for the product will increase. However, the profits of the business may decrease.

Per unit selling price

The price at which a product is presented to the market is the per unit selling price. The calculation of the selling price is as follows;

$$\text{Per unit selling price} = \text{Per unit cost} + \text{Per unit profit margin}$$

When a manufacturing organization adds a certain profit margin to its cost to decide on the product price, it is called as cost based pricing.

Even though the prime factor in making a pricing a decision is cost, there are other factors that should be considered in making pricing decisions;

- P The demand for the product in the market
- P The prices of similar products and substitutes in the market
- P Pricing policy of the organization
- P Legal factors

Following example demonstrates the calculation of the total production cost, per unit cost, per unit profit margin, and per unit selling price of a particular product.

Example:-

A manufacturing plant has following expenses relating to its production

Prime cost Rs. 120 000

Production overhead cost Rs. 80 000

Number of units produced 200

Profit margin on total cost per unit 10%

01. Total production cost

$$\begin{aligned} & \text{Prime cost} + \text{Production overhead cost} \\ &= \text{Rs. } 120\,000 + 80\,000 \\ &= \underline{\underline{\text{Rs. } 200\,000}} \end{aligned}$$

02. Per unit cost

$$\begin{aligned} \text{Per unit cost} &= \frac{\text{Total cost}}{\text{Number of units produced}} \\ &= \frac{200\,000}{200} \\ &= \underline{\underline{\text{Rs. } 1\,000}} \end{aligned}$$

03. Per unit selling price

$$\begin{aligned}\text{Per unit selling price} &= \text{Per unit cost} + \text{Per unit profit margin} \\ &= 1\,000 + 1\,000 \times \frac{10}{100} \\ &= 1\,000 + 100 \\ &= \underline{\underline{\text{Rs. } 1\,100}}\end{aligned}$$

Example:-

Following information relates to a wardrobe manufacturer for the month of January.

Total production cost is Rs. 400 000

Number of wardrobe production during the month is 100 units

Company keeps a profit margin of 20% on cost.

Using the information above, Study the calculation of;

01. Cost of a wardrobe

02. Selling price of a wardrobe

$$\begin{aligned}\text{Per unit cost of a wardrobe} &= \frac{\text{Total cost}}{\text{Number of units produced}} \\ &= \frac{400\,000}{100} \\ &= \underline{\underline{\text{Rs. } 4\,000}}\end{aligned}$$

$$\begin{aligned}\text{Per unit profit margin of a wardrobe} &= 4\,000 \times \frac{20}{100} = \text{Rs. } 800 \\ &= \underline{\underline{\text{Rs. } 800}}\end{aligned}$$

$$\begin{aligned}\text{Selling price of a wardrobe} &= \text{Per unit cost} + \text{Per unit profit margin} \\ &= 4\,000 + 800 \\ &= \underline{\underline{\text{Rs. } 4\,800}}\end{aligned}$$

7.4 Preparation of production cost statement

Let us discuss on how to prepare a product cost statement for a specific period of time using the cost elements we discussed above.

The cost information relating to Ranamayura furniture manufacturers for the month of December 20xx is given below;

	Rs.		Rs.
Wood	120 000	Factory rent	12 000
Labor cost of carpenters	40 000	Fuel and electricity	8 000
Other direct costs	15 000	Factory insurance	14 000
Nail and polish	5 000	Machine depreciation	6 000
Supervisor remuneration	30 000		

The company has produced 250 chairs during the year and keeps a profit margin of 20% on cost per chair.

Study the production cost statement prepared for the month of December 20xx of Ranamayura furniture manufacturers.

Ranamaura Furniture Manufacturers Production cost statement For the month of December 20xx

Prime cost		
Direct materials - wood	120 000	
Direct labor - labor cost of carpenters	40 000	
Other direct expenses - other direct costs	15 000	175 000
Production overhead cost		
Indirect material costs - nail and polish	5 000	
Indirect labor - supervisor remuneration	30 000	
Indirect other expenses - factory rent	12 000	
Fuel and electricity	8 000	
Factory insurance	14 000	
Machine depreciation	6 000	75 000
Total production cost		250 000

$$\begin{aligned}\text{Per unit cost} &= \frac{\text{Total Cost}}{\text{Number of units produced}} \\ &= \frac{250\,000}{250}\end{aligned}$$

$$\text{Production cost per wardrobe} = \underline{\underline{\text{Rs. } 1\,000}}$$

$$\begin{aligned}\text{Selling price per wardrobe} &= \text{Per unit cost} + \text{Profit margin per unit} \\ &= 1\,000 + 1\,000 \times \frac{20}{100} \\ &= 1\,000 + 200 \\ &= \underline{\underline{\text{Rs. } 1\,200}}\end{aligned}$$



Activity 04

01. List the benefits that a manufacturing organization can achieve by preparing the product cost statement.
02. Following are the costs relevant for “Ulu” (Pvt) Ltd, a roof tile manufacturing company for the year 20xx.

	Rs.		Rs.
Material purchases	353 500	Direct other cost	10 000
Production labor cost	85 000	Salaries for security service	20 000
Supervisor salaries	48 000	Machinery depreciation	7 000
Factory electricity	12 000	Factory insurance	3 000
Costs of paint	5 000	Factory maintenance cost	5 000

The company has produced 100 000 units of roof tiles and hopes to earn a 10% of profit margin per roof tile.

Prepare a statement of production cost for the month of January 20XX, including the following information for “Ulu” (Pvt) Ltd.

1. Prime cost
2. Production overhead cost
3. Total production cost
4. Per unit selling price



Activity 05

Classify the below given costs of a shoe manufacturing company in to elements of production cost

- i. Cost of leather and thread
- ii. Salaries for shoe maker
- iii. Factory rent
- iv. Royalty charge of Rs. 20 per shoe paid for the shoe design
- v. Salary of factory watchman
- vi. Cost of adhesives



Activity 06

Given below are the cost information relating to an apparel business “Nawaliya” for the month of November 20xx

	Rs.
Materials purchased	64 000
Salary of the machine operator	20 000
Wages for the supervisor	23 000
Salary of the watchman	12 000
Repair of sawing machine	8 500
Fuel for factory	1 500
Rent for buildings	7 500
Electricity cost	2 500
Value of sawing machines	500 000

The apparel production for the month of November is 100 units and company keeps a profit margin of 15% from each unit. All the materials purchased have been fully utilized.

The sewing machines are depreciated at 12% annually.

You are required to prepare the product cost statement for the month of November 20XX.

7.5 Preparation of a product cost statement using a computer spreadsheets package

The aim of this chapter is to gain the knowledge on preparing a production cost statement using computer spreadsheet package. There are few steps to be followed;

01. Open a spread sheet package.
02. Entry of the cost statement in to the spreadsheet opened
03. Use (Σ) or (Sum) command to get the total of prime cost and production overhead costs
04. In order to obtain per unit cost, enter the total cost and total units of production in to the spread sheet and use division command.

'Irani' roof tile producing company has listed the costs incurred for the month of January 20XX.

	Rs.
Direct materials	145 000
Direct labour cost	25 000
Other direct costs	5 000
Paint	12 000
Wages for supervision	20 000
Salary of the watchman	8 000
Fuel for factory	7 000
Electricity expenses	2 500
Machinery depreciation	500
Factory rent	25 000

The roof tile production for the month of January is 10 000 units and each roof tile expect to earn a 10% of profit margin.

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A	B	C	D	E	F	G	H
1				Irani Roofiles Production			
2				Production cost statements			
3				for the month of January			
4						Rs.	Rs.
5			Direct Materials	Materials	145 000		
6			Direct Labor -	Labour costs	25 000		
7				Direct other costs	5 000		
8			Prime cost				175 000
9			Indirect material costs -	Paint	12 000		
10			Indirect labour -	Salaries for supervision	20 000		
11			Indirect other expenses -				
12				Salaries for watchman	8 000		
13				Fuel for factory	7 000		
14				Electricity expenses	2 500		
15				Machinery depreciation	500		
16				Factory rent	25 000		
17			Production overhead cost				75 000
18			Total production cost				250 000
19			Unit cost of production				250 000
20							10 000
21			Per unit cost				25
22			Per unit selling price	cost + profit margin			27.50
23							