

ACF2200

notes

Based on
Management Accounting
8th edition

What's included?

- **Comprehensive notes on all subject chapters**
- **Diagrams to summarise key information**
- **Excel tables for calculations**
- **Important formulae for the exam**

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Chapter 3: Cost behaviours, cost drivers, and cost estimation

Definitions

- Cost estimation: determining the cost behaviour of a particular cost
- Cost behaviour: the relationship between a cost and a cost driver
- Cost prediction: using cost behaviours to predict costs at a certain level of activity

Cost drivers

A cost driver is the activity that causes a cost to be incurred.

Volume-based cost drivers

The simple and traditional view of management accounting is that all costs are related to production volume or sales volume. This means that production and sales volume are the only cost drivers. Production volume can be units produced, direct labour hours worked, etc.

Non volume-based cost drivers

Modern management accounting theory recognises that besides for volume-based cost drivers, there are also non volume-based cost drivers that cause costs to be incurred and vary.

Four types of costs

Modern systems divide costs and cost drivers into four categories:

1. Unit level: activities performed to produce each unit. These costs require volume-based cost drivers
2. Batch level: activities performed to produce a batch of units. The cost drivers here are not necessarily volume-based, such as electricity for each batch, because batch sizes may vary
3. Product level: activities performed for a product or product family, such as research and development of a new product. Cost drivers here might be the number of new products developed, which is not volume-based

			2. Equivalent units		
	Units	% conversion complete	Direct material	Conversion	
1. Physical units					
WIP start of month	100000	60%			
Units started this month	200000				
Total units to account for	300000				
Units completed this month	220000	100%	220000	220000	
Units spoiled during production	60000	25%	60000	15000	
WIP end of month	20000	80%	20000	16000	
Total units accounted for	300000		300000	251000	
3. Costs to account for and unit costs					Total
WIP start of month			\$ 58,500.00	\$ 24,000.00	\$ 82,500.00
Costs incurred this month			\$114,000.00	\$ 76,400.00	\$ 190,400.00
Total costs to account for			\$172,500.00	\$ 100,400.00	\$ 272,900.00
Costs / equivalent unit (weighted average)			\$ 0.58	\$ 0.40	\$ 0.98
4. Calculation of inventory values					
Units completed this month	220000				\$ 214,500.00
Units spoiled during production			\$ 34,500.00	\$ 6,000.00	\$ 40,500.00
WIP end of month			\$ 11,500.00	\$ 6,400.00	\$ 17,900.00
Total inventory values			\$ 46,000.00	\$ 12,400.00	\$ 272,900.00

FIFO method

Recall that under the FIFO method, the assumption is that the opening WIP units were completed and transferred out before any new production began this period.

Below are the key differences of the FIFO method compared to weighted average.

	FIFO treatment compared to weighted average
Step 1	Identical
Step 2	Equivalent units in opening WIP are deducted from total equivalent units to give the equivalent units for this period only
Step 3	Costs of opening WIP are not used to calculate costs per equivalent unit
Step 4	Final costs are separated into cost of completing opening WIP, cost of units started and completed this period, and cost of closing WIP

A completed process cost report under the FIFO method would appear as follows:

Chapter 7: Overhead costs

Allocating overheads in process costing

Allocating manufacturing overhead costs correctly helps answer many questions:

- What products should be produced?
- What prices should be charged?
- How profitable are different products?
- What value are goods in inventory?

The difficulty with allocating overheads arises when some products require different processes from others, and therefore pass through various production departments before being complete. There are two methods to allocate manufacturing overhead costs to products:

1. Plant-wide approach
2. Departmental approach

Plant-wide approach

Using a plant-wide approach involves using one cost pool for allocation and only selecting one overhead cost driver through which to allocate the overhead costs.

1. Select an overhead cost driver
2. Calculate plant-wide predetermined overhead rate (budgeted manufacturing overhead / budgeted cost driver volume)
3. Determine applied manufacturing overhead (predetermined plant-wide rate x actual cost driver volume)

In calculating the total cost per unit, always remember that manufacturing overhead is only one component. There are also direct material and direct labour costs be traced to the product to find its cost per unit.

Departmental rates

Departmental overhead rates recognise that different cost drivers “cause” the overhead costs to be incurred in different departments. For example, a fabrication department may require more machine hours and an assembly department may require more direct labour hours.

Production departments	Overhead	Cost driver volume	Cost driver unit						
Moulding	\$500,000.00	40,000	Machine hours						
Assembly	\$740,000.00	160,000	Direct labour hours						
Support departments									
Repairs	\$100,000.00								
Engineering	\$580,000.00								
	\$1,920,000.00								
Support department service provision									
	total volume	units	Repairs	Engineering	Moulding	Assembly			
Repairs	20,000	repair hours	-	2,000	3,000	15,000			
Engineering	1,250,000	kilowatt hours	250,000	-	850,000	150,000			
Repairs =	100000 + (Engineering x 250000 / 1250000)								
Engineering =	580000 + (Repairs x 2000 / 20000)								
Reciprocal method									
	Repairs share	Repairs	Engineering share	Engineering	Moulding share	Moulding	Assembly share	Assembly	Total
Department overhead		\$100,000.00		\$580,000.00		\$500,000.00		\$740,000.00	\$1,920,000.00
Allocate Repairs		\$220,408.00	0.10	\$22,040.80	0.15	\$33,061.20	0.75	\$165,306.00	\$440,816.00
Allocate Engineering	0.20	\$120,408.20		\$602,041.00	0.68	\$409,387.88	0.12	\$72,244.92	\$1,204,082.00
Total						\$942,449.08		\$977,550.92	\$1,920,000.00
Cost driver volume						40,000		160,000	
Departmental overhead rate						\$23.56		\$6.11	
						per Machine hours		per Direct labour hours	

Again, it is crucial to remember that these costs are only the manufacturing overhead portion of the product costs. Direct material and direct labour haven't been included yet.

Choices in overhead allocation

Allocation method

If a plant-wide approach is to be used, ensure the cost driver is common to all products.

Otherwise, the reciprocal method is typically the most accurate method. But since it may be costly to obtain information on intra-support department activities, the direct method is often used.

Like most management accounting practices, the choice to obtain highly detailed information is up to the costs and benefits of obtaining it. Regarding overhead allocation, it is important to beware of arbitrary and inaccurate cost allocation, which more often occurs due to the choice of the cost driver rather than the allocation method chosen.

Overhead rates

Budgeted overhead figures are more timely since they are immediately available. Actual overhead figures are more accurate since they reflect actual costs incurred. When it

Chapter 8: Activity based costing

Traditional costing systems

The typical flow of a traditional costing system involves pooling manufacturing overhead, and then allocating it to products using a plant-wide or departmental rate, which is calculated using a single volume-based cost driver. This is added to prime cost to calculate total product cost per unit.

Problems with traditional costing

- Manufacturing costs caused by non-volume-based cost drivers is increasing
- Proportion of non-manufacturing costs is increasing
- Automation is being relied upon more
- Products are more diverse and complex
- Upstream and downstream costs have higher emphasis

Because of the above factors, traditional costing systems will often end up with distorted product costs. Symptoms of the costing system being distorted are:

- Difficult to make products have high margins (because the system understates their costs)
- Competitors' prices seem unrealistically low (because the system is overstating costs)
- Actual overhead greatly exceeds applied overhead (because the system used an application rate which understated the costs consumed)

Activity based costing

Activity based costing (ABC) uses a two-step solution to allocating overhead.

1. Trace or allocate overhead costs to activity pools using resource drivers
2. Allocate activity pool costs to products using activity drivers

Benefits of activity based costing

- ABC appreciates that not all overhead costs are driven by production volume
- ABC looks at unit, batch, product, and facility costs differently

Chapter 18: Cost volume profit analysis

Cost volume profit (CVP) analysis is a short term decision making tool that can show how changes in production volume, costs, and pricing have an effect on profit. It gives information about:

- Products to emphasise
- Sales needed to achieve target profit
- Revenue required to break even
- Whether to increase fixed costs proportion
- How to budget for discretionary expenses

Breakeven point

This is where the firm makes no profit or loss. The point can be expressed in terms of units sold or revenue made.

$$\text{Breakeven point (units)} = \frac{\text{Fixed costs}}{\text{Unit contribution margin}}$$

$$\text{Breakeven point (revenue)} = \frac{\text{Fixed costs}}{\text{Unit contribution margin ratio}}$$

The unit contribution margin ratio is the fraction of the selling price that goes to the contribution margin.

When multiple products are involved, the **weighted average** unit contribution margin needs to be used. This is done by weighting according to sales volume.

Target net profit

The breakeven formula can be adjusted to include a desired net profit.

$$\text{Breakeven point (units)} = \frac{\text{Fixed costs} + \text{target net profit}}{\text{Unit contribution margin}}$$