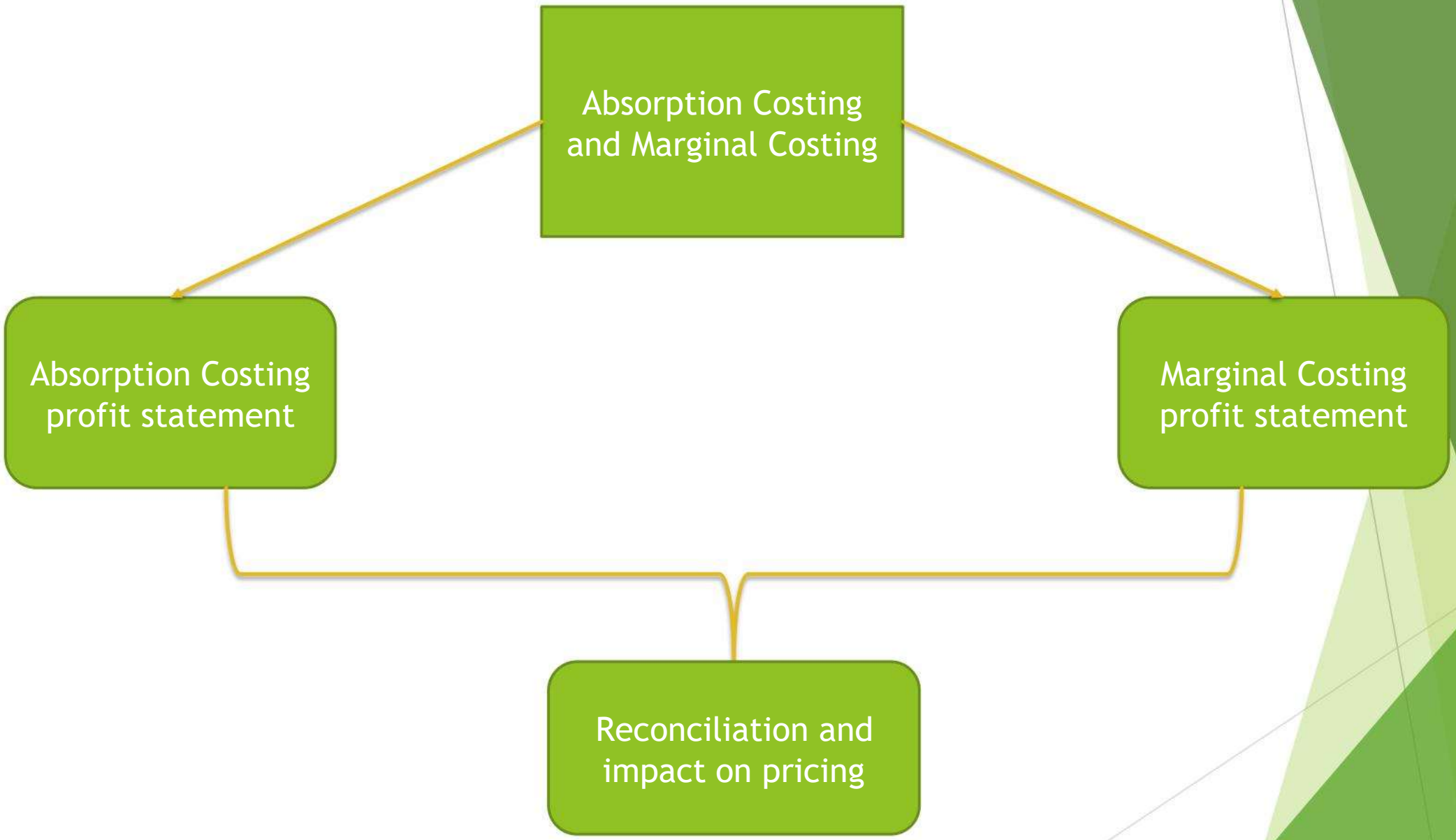
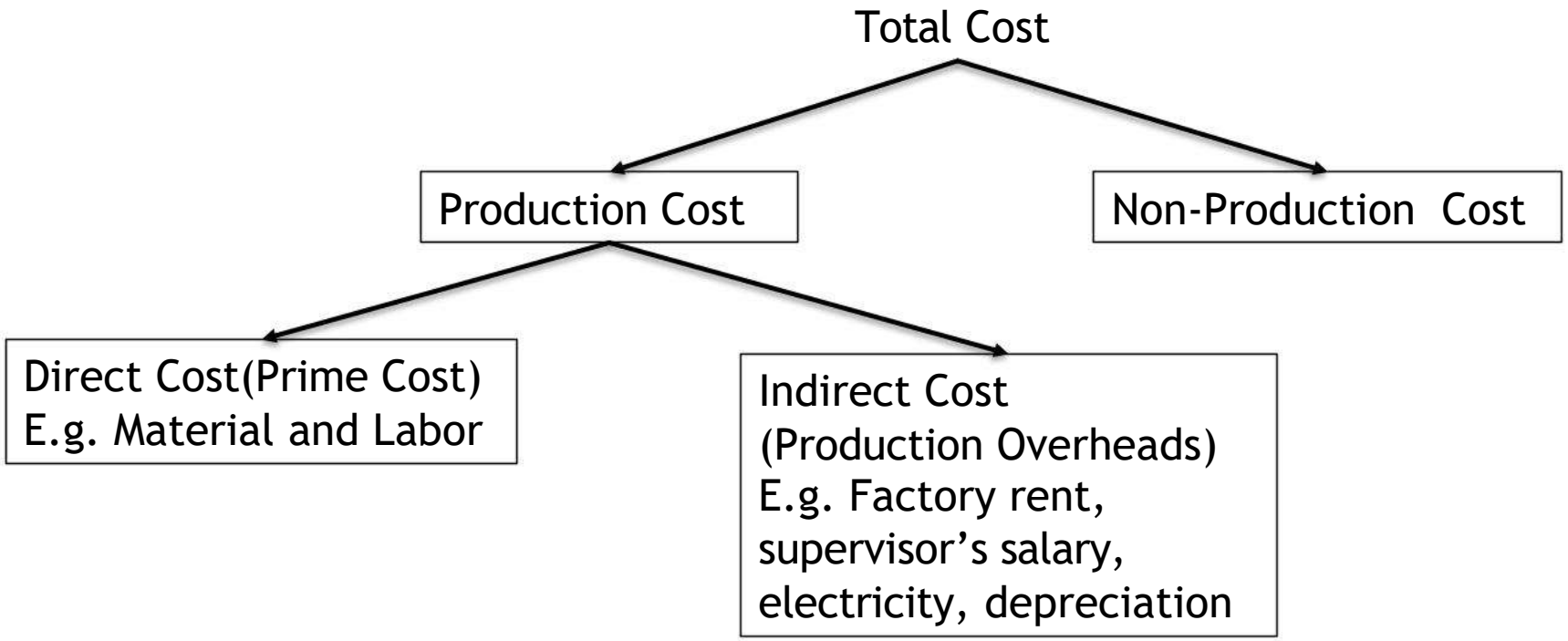
TRADITIONAL COSTING


Absorption Costing and Marginal Costing
Absorption Costing profit statement
Marginal Costing profit statement
Reconciliation and impact on pricing

Absorption Costing

- The aim of traditional absorption costing is to determine the full production cost per unit.



Absorption Costing - Cost Card

Particulars	Amount ($)
Direct materials per unit	X
Direct labor per unit	X
Production overhead per unit	X
Full Production cost per unit	XXX

All production overheads must be absorbed into units of production, using a suitable basis, e.g. units produced, labour hours or machine hours.
The assumption underlying this method of absorption is that overhead expenditure is connected to the volume produced.

Therefore the absorption rate is calculated as:

$$\frac{\text{Total budgeted overhead cost}}{\text{Budgeted production volume}}$$

Predetermined Absorption Rate

Although it is possible to calculate absorption rates using actual overhead costs and actual production volume, this is not the usual practice. This is because:

- ✓ It is usually inconvenient to wait until the end of an accounting period to work out what the absorption rates should be. In absorption costing systems, overhead costs are added to the cost of production as it passes through each stage in the production process, and overhead costs are absorbed when the production happens.
- ✓ A predetermined rate is required to enable a price to be estimated.
- ✓ Overhead costs may vary throughout the year. The overhead absorption rate smooths variations in overheads by applying an average overhead cost to each unit of product throughout the year.

Under-OR-Over Absorption

The normal practice is to absorb production overhead costs at a predetermined rate, based on budgeted overhead expenditure and budgeted production volume.

This however can lead to an over-or under-absorption of the overheads when compared to the actual overheads incurred.

This over-or under-absorption can be calculated as follows:

= (Budgeted overhead rate per unit × actual units) – Actual overheads incurred

= (Under)/Over Absorption

Illustration

A company accountant has gathered together some cost information for her company's product as follows:

	Cost
Direct materials	$4 per kilogram (kg) used
Direct labour	$22 per hour worked
Variable overheads	$6 for each hour that direct labour work

She has also determined that fixed production overheads will be $400,000 in total. Overheads are absorbed on a per unit basis.

Investigation has shown that each unit of the product uses 3 kilograms of material and needs 2 hours of direct labour work.

Sales and production were budgeted at 20,000 units, but only 16,000 were actually produced and 14,000 actually sold. There was no opening inventory.

Required: Produce a standard cost card using absorption costing and value the company's closing inventory on that basis

Solution

Standard cost card

		$
Direct materials per unit	3 kgs × $4/kg =	12
Direct labour per unit	2 hrs × $22/hr =	44
Variable overheads	2 hrs × $6/hr =	12
Production overhead per unit (note)		20

Full/absorption cost per unit		88

Note:

Production overhead per unit in the standard cost card should be based on budgeted production. Therefore in this example they will be ($400,000/20,000 units =) $20 per unit.

Inventory valuation

If 16,000 units were produced and 14,000 units sold then there will be 2,000 units in closing inventory.

Valuing that inventory at the absorption cost will give a value of = 2,000 × $88 = $176,000

Marginal Costing

Marginal cost is the extra cost arising as a result of producing one more unit, or the cost saved as a result of producing one less unit.

It comprises:

- ✓ Direct material
- ✓ Direct labour
- ✓ Variable overheads

Illustration

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	Cost
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She has also determined that fixed production overheads will be $400,000 in total. Overheads are absorbed on a per unit basis.

Investigation has shown that each unit of the product uses 3 kilograms of material and needs 2 hours of direct labour work.

Sales and production were budgeted at 20,000 units, but only 16,000 were actually produced and 14,000 actually sold. There was no opening inventory.

Required: Produce a standard cost card using marginal costing and value the company's closing inventory on that basis

Solution

Standard cost card

		$
Direct materials per unit	3 kgs × $4/kg=	12
Direct labour per unit	2 hrs × $22/hr=	44
Variable overheads	2 hrs × $6/hr=	12

Marginal cost per unit		68

Note:

Fixed production overhead is not included in a marginal costing standard cost card.

Inventory valuation

Valuing that inventory at the marginal cost will give a value of

= 2,000 × $68

= $136,000

Absorption Costing format

Particulars	Amount($)	Amount($)
Sales		X
Less: Cost of sales (Full Production cost) Opening Inventory + Production Costs - Closing Inventory	 X X (X)	 (X)
		XX
(Under)/Over Absorption		+/- X
Gross Profit		X
Less: Selling, distribution and administration costs Variable Costs Fixed Costs	 X X	 (X)
Net Profit/(Loss)		XXX

Marginal Costing format

Particulars	Amount($)	Amount($)
Sales		X
Less: Variable cost of sales		
Opening Inventory	X	
+ Variable Production Costs	X	
- Closing Inventory	(X)	(X)
Gross Profit		XX
Less: Variable		
Selling, distribution and administration costs	X	(X)
Contribution		XX
Less: Fixed Costs		
Production Costs	X	
Selling, distribution and administration	X	(X)
Net Profit/(Loss)		XXX

Illustration

Perry Ltd makes and sells a single product with the following information:

	$/unit
Selling price	50
Direct material	15
Direct labour	10
Variable overhead	5

Fixed overheads are $5,000.

Budgeted and actual output and sales are 1,000 units.

(a) Using absorption costing:

- (i) calculate the profit for the period
- (ii) calculate the profit per unit.

(b) Using marginal costing:

- (i) calculate the contribution per unit
- (ii) calculate the total contribution
- (iii) calculate the profit for the period.

Solution

(a) (i)

	$	$
Sales 1,000 units × $50		50,000
Direct materials 1,000 units × $15		15,000
Direct labour 1,000 units × $10		10,000
Variable overheads 1,000 units × $5		5,000
Fixed overheads		5,000
		35,000
Profit		15,000

(ii) Profit per unit

= $15000 1,000 units =15/unit

(b) (i)

Contribution per unit = $50 – ($15 + $10 + $5) = $20

(ii) Total contribution

= $20/unit × 1,000 units = $20,000

(iii)

	$
Contribution $20/unit × 1,000 units	20,000
Fixed cost	5,000
Profit	15,000

The two systems give the same profit provided there is no change in inventory.

Advantages and Disadvantages

Absorption Costing

Advantages	Disadvantages
Improved long-time pricing	More difficult
Ensures prices cover all costs	Encourages over-production
Better cost control	Requires arbitrary cost apportionments
Consistent with financial reporting	

Marginal Costing

Advantages	Disadvantages
Better for short-term decision making	Shouldn’t be used for long term-pricing
Simpler	Can’t be used for external reporting

Reconciling the profits

The differences between the two profits can be reconciled as follows:

	$
Absorption costing profit	X
(Increase)/decrease in inventory × fixed overheads per unit	(X)X
Marginal costing profit	X

- ✓ If inventories increase, then absorption costing profits will be higher than marginal costing profits. This is because some of the fixed overhead is carried forward in inventory instead of being written off against sales for the period.
- ✓ If inventories reduce, then marginal costing profits will be higher than absorption costing profits. This is because the fixed overhead which had been carried forward in inventory with absorption costing is now being released to be charged against the sales for the period.
- ✓ Marginal costing and absorption costing systems give the same profit when there is no change in inventories.

Further explanation on reconciling profits between periods

- Marginal costing reconciliation

	$
Profit for period 1	X
Increase/(decrease) in sales × contribution per unit	(X)X
Profit for period 2	X

- Absorption costing reconciliation

This is a little trickier as the reconciliation needs to be adjusted for any over/under-absorptions that may have occurred of fixed overheads.

	$
Profit for period 1	X
Increase/(decrease) in sales × profit per unit	X(X)
(Over-)/under-absorption in period 1	(X)/X
Over- /(under)-absorption in period 2	X/(X)
Profit for period 2	X

For example, an over-absorption in period 1 makes profit for that month higher, therefore it must be deducted to arrive at period 2's profit. On the other hand, an over-absorption in period 2 makes period 2's profit higher than period 1's, therefore it must be added in the reconciliation.

Exercise

- Sales in period 12000 units.
- Production volume 13500 units
- Selling price $150
- Variable costs $65 per unit
- Fixed production costs per unit $30

The company above uses a marginal costing system.

Calculate the difference in reported profit under absorption costing?

Pricing strategies based on COST

- In any pricing decision there are four key factors to consider:

(a) Costs

(b) Competitors

(c) Customers

(d) Corporate Objectives

Full-Cost plus pricing

- Using this method, the selling price for the product is determined as follows:

  Selling price = Full cost per unit × (1 + mark up percentage)

So that, for example, if the full cost was $40 and the organisation was using a 15% mark-up percentage then the selling price would be set at $46 ($40 × 1.15)

Advantages	Disadvantages
Quick and cheap if cost structures known	Can be the basis for uncompetitive prices
Useful in contracting industries	Ignores price elasticity of demand
Required profit achieved if sales budgeted are achieved	Problematic if budget sales volumes not achieved
Useful to justify price increases	Ignores competitors activities

Marginal Cost plus pricing

- Using this method, the selling price for the product is determined as follows:

  Selling price = Marginal cost per unit × (1 + mark up percentage)

Advantages	Disadvantages
Simple to operate.	Does not ensure that sufficient attention is paid to demand conditions, competitor's prices and profit maximisation.
Draws management attention to contribution and the effects of higher or lower sales volumes on profit.	Ignores fixed overheads in the pricing decision. Fixed costs may not be recovered in the long term.
Good for pricing specific contracts – recognises relevant costs	Difficult to raise prices where mark-ups are low.
Facilitates decision making when resources are scarce	May encourage price wars.

Target return on capital

- As well as determining the selling price by adding a mark-up on cost, an organisation may also set the mark-up at a level that provides a target return on the investment that has been made in the product. The mark-up is calculated as:

$$\text{Profit mark-up} = \frac{\text{Targeted return on investment in the product}}{\text{Budgeted level of production}}$$

The targeted return on investment is calculated as:

- Targeted return on investment in the product

Total investment in the product × targeted rate of return

Profit Margin

Selling price = Total cost ÷ (1 – required margin)

Illustration

A product has a total production cost of $60. Determine the selling price for the product if the company wants to achieve:

(a) A 20% mark-up on total production cost

(b) A 20% margin on total production cost

Solution:

(a) a 20% mark-up on total production cost

Selling price = $60 × 1.20 = $72

Profit = $12 i.e. Mark up on cost = 20% Margin on sales = 12/75 = 17%

(b) a 20% margin on total production cost

Selling price = $60 / (1 – 0.2) = $75

Profit = $15 i.e. Mark up on cost = 15/60 = 25% Margin on sales = 20%

THANK YOU
SNEHA VEMULA
ACMA CGMA