Management Accounting

Week 2 Part 3

Content

- Stock Costing Method (absorption costing)/ Variable Costing on the impact of operating profit and inventory

Stock Costing Method

- There are two types: variable costing and absorption costing
- Only difference: the treatment of **fixed manufacturing overhead**
- Under variable costing, fixed manufacturing overhead treated as periodic expense
- Under absorption costing, treated as stock and become part of COGS when sold

Unit cost under absorption costing (also COGS)

Unit cost under absorption costing (also COGS)

Unit cost under variable costing

Variable manufacturing Cost   Fixed manufacturing Cost

- **Non-manufacturing costs are always expenses**

Variable Costing

- All variable manufacturing costs are charged as unit cost
- Fixed costs are charged to P&L account

- Called Contribution Margin, so deduct all variable cost first
- Contribution Margin: (total) revenue – (total) variable cost
- Operating Profit: Contribution margin – all fixed cost

General format

Revenue
-manufacturing variable cost
-non manufacturing variable cost
= Contribution margin
- fixed manufacturing cost
- fixed non-manufacturing cost
= operating profit

Example

Here shows a company's production and stock figure

Finished Goods	Year 1	Year 2	Total
Opening Stock	-	2,000	-
Produced	10,000	10,000	20,000
Sold	8,000	12,000	20,000
Closing Stock	2,000	0	0

First year unit produced 10000, unit sold 8000

Unit Data:

Sales Price :71

Variable manufacturing cost: Direct material 4

Direct labour 21

Indirect manufacturing overhead 24

Variable non-manufacturing cost: 2

Fixed non-manufacturing cost: 30000

Fixed manufacturing cost: 54000

Normal Capacity: 12000 units(allocation base for fixed manufacturing cost)

What is the operating profit under for first year variable costing?

	Year 1 variable costing)			
Revenues		£568.000	(=71x8.000)	
COGS	Var mftg	£392.000	(=49x8.000)	
	Variable nonmftg cost	£ 16.000	(=8.000soldx2/unit)	
Contribution margin		£160.000		
Fixed mftg costs		£ 54.000		
Fixed nonmftg costs		£ 30.000		
Operating profit		£ 76.000		

Absorption Costing:

- Fixed manufacturing overhead cost is absorbed into the unit cost
- First, choose an allocation base.
- Fixed manufacturing cost per unit: Fixed manufacturing cost/ allocation base
- When the amount of products produced are not sold in this period, these stock will bear some manufacturing overhead, hence result in the different operating profit than variable costing
- Absorption costing is linked with **gross margin**

Absorption Costing

- Gross margin = total revenue – total cost of goods sold

General structure for absorption costing:

Revenue

- Cost of goods sold

(-/+product volume variance)[non-exist when budgeted production = actual production]

= gross margin

- fixed non-manufacturing cost

- variable non-manufacturing cost

= operating profit

First year unit produced 10000, unit sold 8000

Unit Data:

Sales Price :71

Variable manufacturing cost: Direct material 4

Direct labour 21

Indirect manufacturing overhead 24

Variable non-manufacturing cost: 2

Fixed non-manufacturing cost: 30000

Fixed manufacturing cost: 54000

Normal Capacity: 12000 units(allocation base for fixed manufacturing cost)

What is the operating profit under for first year absorption costing?

Higher profit under absorption costing when stock build up

	Year 1 (absorption costing)			
Revenues		£ 568.000	(=71x8.000)	
COGS	Var mftg	£ 392.000	(=49x8.000)	
	Fixed mftg	£ 36.000	(=4,5x8.000)	
	Volume variance	£ 9.000	([12,000-10,000]x4,5), charged to COGS	
Gross margin		£ 131.000		
Fixed nonmftg costs		£ 30.000		
Var nonmfgt		£ 16.000	(=8000soldx2/unit)	
Operating profit		£ 85.000		

Production Volume Variance = when produced less than capacity, the cost of underproduction

Shortcut Conclusion

- The only difference in operating profit under variable costing and absorption costing in a particular period is the changing value of fixed manufacturing overhead cost in the inventory.
- **So in short, the difference in operating profit = [amount of inventory in this period – amount of inventory in last period] * fixed manufacturing cost per unit**
- When inventory are building up, the operating profit under variable costing will higher than that of absorption costing by the difference and vice versa
- The alternative way to calculate the operating profit under absorption costing is to calculate the operating profit under variable costing plus/ minor the difference [this can avoid the concern for production volume variance]

Illustration of shortcut of calculating operating profit for absorption costing

Finished Goods	Year 1	Year 2	Total
Opening Stock	-	2,000	-
Produced	10,000	10,000	20,000
Sold	8,000	12,000	20,000
Closing Stock	2,000	0	0

Overall Illustration

Finished Goods	Year 1	Year 2	Total
Opening Stock	-	2,000	-
Produced	10,000	10,000	20,000
Sold	8,000	12,000	20,000
Closing Stock	2,000	0	0
Operating Profit under variable costing	76000	156000	232000
Operating Profit under absorption costing	85000	147000	232000

Denominator level

- Theoretical capacity (maximum)
- Practical capacity
- Normal capacity
- Mastery plan capacity

- the smaller the denominator level chosen, the larger the proportion of fixed manufacturing overhead cost per output unit that can be allocated to stock. the higher operating profit

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Key Impact on Inventory and Profit

The fixed manufacturing costs expense is 2200000, the total units produced in this year 1100000

		Fixed manufacturing costs expense in 2015	Balance sheet Inventory 2015	Difference Net profit
Variable costing				
	Sales are 900.000, 1.000.000 or 1.100.000 units	€ 2.200.000	0	
Absorption costing				
	Sales are 900.000 units, inventory account increases (200.000x2€)	€ 1.800.000	€ 400.000	€ 400.000
	Sales are 1.000.000 units, inventory account increases (100.000x2€)	€ 2.000.000	€ 200.000	€ 200.000
	Sales are 1.100.000 units, inventory account does not increase (0x2€)	€ 2.200.000	€ -	€ -

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Exam on the Spot

Top management of Nurion is concerned with inventory levels. It is wondering whether local managers are producing in excess of market demand and whether Variable Costing would be a better method for the valuation of stock to prevent such managerial behavior.

d) Explain (1) the difference between Variable Costing and Absorption costing (2 points), and (2) why Absorption costing may provide incentives for undesirable stock building (3 points).

In Variable Costing, all variable manufacturing costs are included as inventoriable costs;
fixed costs are considered period costs
Under absorption costing, both variable and fixed manufacturing costs are considered inventoriable costs

2 Under absorption costing, part of the fixed costs are allocated towards inventories. As a result,
inventories will be higher and profits will also be higher.
Under variable costing, all fixed costs are charged to the income statement.
Thus, the difference is in how fixed costs are treated.
When sales are lower than production, profits can be improved
by producing for inventory when using absorption costing
Problem is that the inventories may not be sold,
which results in charges to the income statement in the long run

Exam Practice

Last year, Tennindo Ltd had a total production cost of €250,000, of which €210,000 is variable. A total of 51,000 units were produced, and 12,750 units remain as inventory at year end. Assuming a variable costing approach, the value of the inventory in € is:

a. € 52,500

b. € 62,500

c. € 160,000

d. € 237,250

Exam Practice

24. Which statement is true? Absorption costing …

a. Expenses marketing costs as cost of goods sold

b. Treats direct manufacturing costs as a period cost

c. Includes fixed manufacturing overhead as an inventoriable cost

d. Is required for internal reports to managers

