

Written Exam at the Department of Economics summer 2020

Managerial Accounting

Final Exam

Date 28.05.2020

Solution notes

(3-hour open book exam)

Exercise 1

Q1

The profit statements would be:

	Present			Proposed		
	Amount	Per Unit	%	Amount	Per Unit	%
Sales	1,800,000	60	100	1,800,000	60	100
Less variable Expenses	1,260,000	42	70	720,000	24	40
Contribution margin	540,000	18	30	1,080,000	36	60
Less fixed expenses	360,000			900,000		
Profit	180,000			180,000		

Q2

a.	Present	Proposed
Degree of operating Leverage	$540,000/180,000 = 3$	$1,080,000/180,000 = 6$
b.		
Break-even point in DKK	$360,000/0,3 = 1,200,000$	$900,000/0,6 = 1,500,000$
c.		
Margin of safety = Total sales less Break-even sales:		
1,800,000 – 1,200,000	600,000	
1,800,000 – 1,500,000		300,000
Margin of safety percentage = Margin of safety divided by Total sales:		
$600,000 \div 1,800,000$	33 1/3%	
$300,000 \div 1,800,000$		16 2/3%

Q3

The major factor would be the sensitivity of the company's operations to seasonal changes in the demand. In periods with a high level of activity, the company will be better off with the new equipment. The reason is that the new equipment will increase the CM ratio, thereby permitting profits to rise more rapidly in periods where sales are strong. However, in periods of less demand, the company will be worse off with the new equipment. The greater fixed costs created by the new equipment will cause losses to be deeper and sustained more quickly than at present. Management must therefore decide whether the potential for greater profits in good periods is worth the risk of deeper losses in bad periods.

Q4

Be aware that no information is given on either the new variable expenses or the new contribution margin ratio. Both of these items must be determined before the new break-even point can be computed. The computations are:

New variable expenses:

$$\begin{aligned} \text{Sales} &= \text{Variable expenses} + \text{Fixed expenses} + \text{Profits} \\ 2,160,000^* &= \text{Variable expenses} + 192,000 + 240,000^{**} \\ 1,728,000 &= \text{Variable expenses} \end{aligned}$$

* New level of sales: $1,800,000 \times 1.20 = 2,160,000$

** New level of profit: $180,000 \times 1\frac{1}{3} = 240,000$

New CM ratio:

Sales	2,160,000	100 %
Less variable expenses	1 728,000	80
Contribution margin	432,000	20 %

With the above data, the new break-even point can be computed:

$$\text{New break even point} \quad 192,000/0,20 = 960,000$$

Exercise 2

Problem 7-10 (40 minutes)

Q1

a.b

	Absorption Costing		Variable Costing	
	Year 1	Year 2	Year 1	Year 2
Variable production costs	24	24	24	24
Fixed manufacturing overhead costs:				
900,000 ÷ 20,000 units	45		—	
900,000 ÷ 25,000 units)		36		—
Unit product cost	69	60	24	24

Q2

	Year 1		Year 2	
Sales		2,100,000		2,100,000
Less variable expenses:				
Variable cost of goods sold:				
Beginning inventory		0		0
Add variable manufacturing costs		480,000		600,000
Goods available for sale		480,000		600,000
Less ending inventory		0		120,000
Variable cost of goods sold		480,000		480,000
Variable selling expense and administrative expenses (20,000 units x 3)		60,000		60,000
		540,000		540,000

Contribution margin		1,560,000		1,560,000
Less fixed expenses:				
Fixed manufacturing overhead	900,000		900,000	
Fixed selling and administrative expenses	540,000	1,440,000	540,000	1,440,000
Operating profit		120,000		120,000

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Q3

	Year 1	Year 2
Variable costing operating profit	120,000	120,000
Add: Fixed manufacturing overhead cost deferred in inventory under absorption costing (5,000 units × 36)	—	180,000
Absorption costing operating profit	120,000	100,000

Q4

The increase in production in Year 2, in the face of level sales, caused a buildup of inventory and a deferral of a portion of Year 2's fixed manufacturing overhead costs to the next year. This deferral of cost relieved Year 2 of 180,000 (5,000 units × 36) of fixed manufacturing overhead cost that it otherwise would have borne. Thus, its operating profit was 180,000 higher than the operating profit of Year 1, even though the same number of units was sold each year. In sum, by increasing production and thereby building up inventory, the company was able to increase operating profits without increasing sales. This is a major criticism of the absorption costing approach.

Q5**a.**

Two things would have been different under JIT. First, production would have been geared to sales, rather than production exceeding sales in order to have a inventory of goods on hand. Second, the unit costs under absorption costing would have been the same as in Year 1, since the same number of units would have been produced in each year.

b.

Under JIT, the operating profit for Year 2 using absorption costing would have been approximately 120,000—the same as in Year 1. The reason is that with production geared to sales, there would have been little or no ending inventory of units on hand unsold and therefore there would have been little or no fixed manufacturing overhead costs deferred in inventory. The entire 900,000 in fixed manufacturing overhead costs would have been charged against Year 2 operations, rather than having 180,000 of it deferred to future periods through the inventory account. Thus, operating profit would have been about the same in each year (120,000) under *both* variable and absorption costing.

Exercise 3

The students are in this exercise evaluated on the breadth and depth in the answering of the questions.