

Written Exam at the Department of Economics summer 2021

## **Managerial Accounting**

Final Exam

01.06.2021

(3-hour closed book exam)

Answers only in English.

**This exam question consists of 4 pages in total**

### **Falling ill during the exam**

If you fall ill during an examination at Peter Bangsvej, you must:

- submit a blank exam paper.
- leave the examination.
- contact your GP and submit a medical report to the Faculty of Social Sciences no later than five (5) days from the date of the exam.

### **Be careful not to cheat at exams!**

You cheat at an exam, if during the exam, you:

- Make use of exam aids that are not allowed
- Communicate with or otherwise receive help from other people
- Copy other people's texts without making use of quotation marks and source referencing, so that it may appear to be your own text
- Use the ideas or thoughts of others without making use of source referencing, so it may appear to be your own idea or your thoughts
- Or if you otherwise violate the rules that apply to the exam

### Exercise 1 (40%)

Amplifiers Ltd. is a company that produces and sells High End Amplifiers. The company's statement of profit or loss for last year is shown below:

In EUR

Sales (1,500 units at EUR 6,000)	9,000,000
Less variable expenses	<u>6,300,000</u>
Contribution margin	2,700,000
Less fixed expenses	<u>1,800,000</u>
Operating profit	<u>900,000</u>

Amplifiers Ltd. operates under volatile conditions in the economy. That has the consequence that profits may vary considerably from year to year according to general economic conditions. The company has a large amount of unused capacity and is working on ways to improve profits.

### Questions

- Q1** New equipment has come onto the market that would allow Amplifiers Ltd. to automate a part of its operations. Variable costs would be reduced by EUR 1,800 per unit. However, fixed costs would increase to a total of EUR 4,500,000 each year. Prepare two contribution statements of profit or loss, one showing present operations and one showing how operations would appear if the new equipment is purchased. Show an Amount (EUR) column, a Per Unit column, and a Percentage column on each statement.
- Q2** Refer to the statement of profit or loss in Q1 above. For both present operations and the proposed new operations, compute (a) the degree of operating leverage, (b) the break-even point in EUR, and (c) the margin of safety in both amount and percentage terms.
- Q3** Refer again to the data in Q1 above. What factors would be important for you in deciding whether to purchase the new equipment? Please assume that that you have the available funds to make the purchase.
- Q4** Refer to the original data. Rather than purchase new equipment, the manager is thinking about changing the company's marketing method. Under the new method, sales would increase by 20% and profit would increase by one-third. Fixed costs could be reduced to EUR 960,000. Compute the break-even point for the company after the change in marketing method.

## Exercise 2 (40%)

Basic Products A/S is a Danish company that operates a Wood Division which fells trees from own forests and make wooden boards for use in the production of wooden boxes. Revenue and costs associated with a cubic metre (m<sup>3</sup>) wood is as follow:

In DKK

Selling price		280
Less expenses:		
Variable	168	
Fixed (based on a capacity of 50,000 m <sup>3</sup> per year)	<u>72</u>	<u>240</u>
Operating profit		<u>40</u>

Basic Products A/S also owns a company that manufactures wooden boxes. This company is treated as a profit centre with full profit responsibility. The Box Division is currently purchasing 5,000 m<sup>3</sup> of wood per year from a supplier at a cost of DKK 280 per m<sup>3</sup>, less a 10% quantity discount. Basic Products A/S CEO wishes the Box Division to begin purchasing its wood from the Wood Division if an acceptable transfer price can be agreed on.

### Questions

For Q1 and Q2 below, assume that the Wood Division can sell all its wood to outside customers at the normal DKK 280 price.

**Q1** Are the managers of the Wood and Box Divisions likely to agree to a transfer price for 5,000 m<sup>3</sup> wood next year? Please explain?

**Q2** If the Wood Division meets the price that the Box Division is currently paying to its supplier and sells 5,000 m<sup>3</sup> of wood to the Box Division each year, what will be the effect on the profits of the Wood Division, the Box Division, and the company as a whole? Please show the computations.

For Q 3–6 below, assume that the Wood Division is currently selling only 30,000 m<sup>3</sup> of wood each year to outside customers at the normal DKK 280 price.

**Q3** Are the managers of the Wood and Box Divisions likely to agree to a transfer price for 5,000 m<sup>3</sup> of wood next year? Please explain.

**Q4** Suppose that the Box Division's outside supplier drops its price to DKK 236 per m<sup>3</sup>. Should the Wood Division meet this price? Please explain. If the Wood Division does not meet the DKK 236 price, what will be the effect on the profits of the company as a whole?

**Q5** Refer to Q4 above. If the Wood Division refuses to meet the DKK 236 price, should the Box Division be required to purchase from the Pulp Division at a higher price for the good of the company as a whole?

**Q6** Refer to Q4 above. Assume that due to inflexible management policies, the Box Division is required to purchase 5,000 m<sup>3</sup> of wood each year from the Wood Division at DKK 280 per m<sup>3</sup>. What will be the effect on the profits of the company as a whole?

**Exercise 3 (20%)**

**Q1** Why do companies need to implement a Balanced Scorecard that measures performance in four dimensions (perspectives)? Explain the content of each of the four perspectives and give examples of typical measures that are used in each perspective?

**Q2** Explain the reasons why it in most companies is an advantage in addition to financial measures to use non-financial measures when measuring and managing performance?