

Management Accounting

7th Edition

- Link 9.B –
Neutral Cost Increase

To determine the variable costs that can be added to an existing production scenario we study EMS KAYAK GmbH again at the break-even point as depicted by Figure 9.5 in the textbook. This helps managers to understand how much variable costs can increase that the outsourcing gives the same break-even point as before.

EMS KAYAK GmbH breaks-even with $\#ky = 60$ kayaks. The equation indicates that the profit is zero because sales equal costs. $P(60) = 0 = 400 \times 60 - 200 \times 60 - 5,000 - 7,000$. (with: P = profit). We now want to increase the variable costs by

ΔPC and dispose machinery. No depreciation applies thereafter. The break-even point is supposed to stay at $\#ky = 60$ to keep the risk at the same level. Hence, $P_{out}(60) = 0 = 400 \times 60 - (200 + \Delta PC) \times 60 - 5,000$. As a result, $\Delta PC = ((400 - 200) \times 60 - 5,000) / 60 = 116.67$ EUR. (with: P_{out} = profit based on outsourcing, ΔPC = increase of proportional costs). For proof, we increase the proportional cost by 116.67 EUR and show EMS KAYAK GmbH's profit and cash flow calculation in Figure 1.

INCOME STATEMENT			CASH FLOW STATEMENT	
	/u	[EUR]		[EUR]
Sales	400.00	24,000.00	Proceeds	24,000.00
Var. Costs	316.67	(19,000.00)	Var. Costs	(19,000.00)
Fixed costs		(5,000.00)	Fixed costs	(5,000.00)
Depreciation		0.00	Tax	0.00
EBT		(0.00)	OCF	(0.00)
less: tax		0.00		
EAT		(0.00)		

Output =	60
NPV _{20x2} =	(35,000.00)
Interest rate =	0.10

Figure 1: EMS KAYAK GmbH's profit and cash flow plan for the farming out case

EMS KAYAK GmbH's can increase the proportional costs by 116.67 EUR and keeps the break-even point unchanged. Caution, the high variable costs decrease profit at the operating point of 525 kayaks significantly. The profit was: $P(525) = 400 \times 525 - 200 \times 525 - 5,000 - 7,000 = 93,000.00 \text{ EUR}$ and now is: $P_{out}(525) = 400 \times 525 - (200 + 116.67) \times 525 - 5,000 = 38,748.25 \text{ EUR}$. This is a reduction of: $(93,000 - 38,748.25) / 93,000 = 58.34\%$ which is a high sacrifice for the lower risk. For higher volumes the profit reduction becomes worse. It is therefore recommended calculating the 'neutral increase' of proportional costs

rather at an operating point above breaking-even.

We discussed break-even point shifting to show that risks for a business depend on its flexibility to changes output. Investments cannot be made undone easily. If the company needs to cut costs, machines must be disposed. In contrast to reductions of fixed cost, cost for current assets, such as supplies and materials, can easily adjusted to demand. Thus, a company that contractors out production steps shifts the risk (as well as profits) to its suppliers.