



Chapter Four: Short-term Decision Making
Selecting Style of Production

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A company have to choose a production style to produce its product through renting an automatic machine or semi-automatic machine. The following data are related to two machines.

Semi-automatic Style	Automatic Style	Details
		Variable Cost:
1300	1250	Direct Material
1450	1100	Direct Labor
2750	2350	Variable Cost per unit
		Fixed Cost:
1500000	3000000	Rent of machine
500000	500000	Maintenance Cost
2000000	3500000	Total Fixed Cost
5000	5000	Sales Price

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Required :

- 1- prepare income statement for the company in according to the two styles above for 3500 units and 4000 units
- 2- Which style is better?

Required 1:

Income Statement for 3500 units		
Semi-automatic Style	Automatic Style	Details
17500000	17500000	Sales Revenue
9625000	8225000	- Variable Cost
7875000	9275000	=CM
2000000	3500000	- Fixed Cost
5875000	5775000	=Net profit

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Income Statement for 4000 units		
Semi-automatic Style	Automatic Style	Details
20000000	20000000	Sales Revenue
11000000	9400000	- Variable Cost
9000000	10600000	=CM
2000000	3500000	- Fixed Cost
7000000	7100000	=Net profit

Required 2:

Income statement for sales volume 3500 units shows that the semi-automatic style is better, and income statement for sales volume 4000 units shows that automatic style is better. Therefore, which style is better? answering this question require to compute symmetry point.

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$$\begin{array}{rcl}
 \text{Cost of automatic style} & = & \text{Cost of semi-automatic style} \\
 \text{Fixed cost + Variable Cost} & = & \text{Fixed Cost + Variable Cost} \\
 \$3500000 + (\$2350 \times Z) & = & \$2000000 + (\$2750 \times Z) \\
 1500000 & = & 400 Z
 \end{array}$$

$$Z = \frac{1500000}{400} \quad \text{units symmetry point } 3750 =$$

OR

$$\begin{array}{rcl}
 \text{Symmetry point} = & \frac{\text{Fixed Cost } \blacktriangle}{\text{Variable cost per unit } \blacktriangle} & \\
 & \frac{2000000 - \$3500000}{2350 - \$2750} & \\
 & \frac{\$1500000}{\$400} & \text{units } 3750 =
 \end{array}$$

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Answer:

If sales volume will be more than 3750 units, the automatic style is better. if sales volume will be less than 3750 units semi-automatic style is better.