

Chapter 11

Cost structure & AC/DC

The following data was gathered concerning costs of a business at two production levels:

Total cost at 4,000 units = €65,000

Total cost at 5,000 units = €70,000

Total cost consists of a fixed cost and (proportional) variable costs.

- A. Determine the variable cost per unit
- B. Determine the total fixed costs per period

Suppose the normal (average) production = 4,500 units per period.

Last year actual production was 4,700 units while actual sales was 4,600. Sales price = €20.

- C. Show the profit for absorption costing
- D. Show the profit for direct costing
- E. Explain the difference between answers C and D.

Solutions Cost structure & AC/DC

A. $(€70,000 - €65,000)/1,000 = €5$ per unit.

B. Fixed cost = total cost – variable costs = $€70,000 - 5,000 * €5 = €45,000$.

Standard cost = $€5 + €45,000/4,500 = €15$.

Profit AC (analyzed statement)

$4,600 * (€20 - €15) = €23,000$

$(4,700 - 4,500) * €10 = €2,000+$

Profit = $€25,000$

Traditional Statement

Sales:	$4,600 * €20 =$	€92,000
Var production cost	$4,700 * €5 =$	€23,500
Fixed cost:	<u>€45,000</u>	
Total production cost:	€68,500	
Inventory change:		
$100 * €15 =$	(€1,500)	
Cost of sales:		<u>(€67,000)</u>
Profit:		€25,000

Direct costing

$4,600 * (€20 - €5) = €69,000$

€45,000 -

€24,000

E. when inventory changes, AC and DC are different.

When inventory up $AC > DC$.
When inventory down $DC > AC$.

Here inventory up so $AC > DC$

The difference is €10 (F/N) per unit of inventory change. So $(4,700 - 4,600) * €10 = €1,000$.

Absorption costing Riddle

A company's fixed costs per year are €10,000. The variable cost per unit is €4. Normal or average production per year is 5,000 units. Last year 5,200 were made while 5,100 units were sold. The profit using absorption costing was €25,900.

A. What is the sales price per unit?

B. What is the break even point?

Solutions Absorption Costing Riddle

A. Production Volume variance = $200 * €2 = €400$.

On the analyzed income statement, profit equals Sales volume result + Production volume variance.

Sales volume result = $€25,900 - €400 = €25,500$.

Full cost per unit = $€4 + €10,000/5,000 = €6$.

$5,100 * (\text{Sales price} - €6) = €25,500$.

Sales price - €6 = €5.

Sales price = €11.

B. $€10,000 / (€11 - €4) = 1,429$ units.

Running a Restaurant

A restaurant has two types of variable costs; the cost of ingredients and the cost of waitresses. The cost of ingredients is 30% of sales revenue. On average, for every \$200 in sales revenue, one hour of waitress time is needed. Waitresses earn \$15 per hour. The total fixed cost of the restaurant is \$4,000 per week. It is open seven nights a week. At full capacity, the restaurant can accommodate 40 guests per night. An average guest spends \$50 per night. At the moment, the occupation rate of the restaurant is 60%.

A. What is the break even sales level per week?

B. What is the profit per week?

C. Let's assume that by hiring an additional staff member with a fixed salary of \$1,000 per week the occupation rate could be increased to 80% (all other data remain the same). From a profit perspective, would you recommend this?

Solutions Running a Restaurant

A. Variable cost = $30\% + \$15/\$200 = 37.5\%$ of sales.

Break even sales = $\$4,000 / (1 - 0.375) = \$6,400$.

B. $0.6 * 40 * \$50 * 7 = \$8,400$. $\$8,400 * 0.625 - \$4,000 = \$1,250$.

C. $8 * \$50 * 7 = \$2,800$ extra sales.

$\$2,800 \times 0.625 - \$1,000 = \$750$ extra profit so hiring the new employee is a good idea.