

Module 11 – Costs for Decision Making

11.2 The Dilemma of the Denominator:

- Overheads can be allocated using the following equation
$$\frac{\text{Budgeted manufacturing (or non-manufacturing) overhead}}{\text{Budgeted Volume of output (units or hours)}}$$
- The numerator (actual overhead) may vary throughout the year – but these variations are usually not significant. **The numerator is always fixed overhead!!**
- The denominator, however, may vary widely due to market demand

Example

A manufacturer planned to produce and sell 10,000 pens. Costs of manufacture were as follows:

	\$
Direct Material	20
Direct Labor	30
Variable costs of production	50
Fixed Production costs (such as depreciation, management salaries etc. , totaling \$100k , 100k/10k =\$10)	10
Full production cost	60

Note: fixed production costs = fixed manufacturing overhead

If each pen sells for \$100, then the gross profit is \$40, from which non-manufacturing overheads would be deducted (salaries, selling & distribution etc.). Assume these total \$200,000

The P&L would look like this:

	\$
Sales 10,000 pens @ \$100	1,000,000
Less Full cost of Sales 10,000 @ \$60	600,000
Gross Profit	400,000
Other Expenses (non manufacturing overhead)	200,000
Net Profit	200,000

- This is called *Full or Absorption* cost accounting because each unit is asked to absorb its share of fixed production overhead

Let's assume the business only produced what was required by the market due to competitive pressures. Because of this the company did not attempt to allocate fixed production overhead to each product. Assuming it sold exactly the same amount of pens as above, its P&L would look like this:

	\$	
Sales 10,000 pens @ \$100		1,000,000
Less Variable Cost of sales 10,000 @50		<u>500,000</u>
Contribution Margin		500,000
Fixed Production Costs	100,000	
Other Expenses	<u>200,000</u>	<u>300,000</u>
Net Profit		200,000

- This form of accounting is called *variable or direct costing* because it accounts for fixed costs in a lump sum. As in the above cases, the net profit will always be the same for both methods as long as
 - The actual production equals planned production
 - The company sells all it produces

Production>Sales Example

Say the absorption method is used by the above company but instead of producing and selling 10,000 they produce 11,000 and sell 10,000.

- Throughout the year the pens will be allocated \$10 fixed production when in fact they should have been allocated $\$100,000/11,000 = \9.09 .
- So each pen was allocated or over absorbed \$0.91, that totals $\$0.91 \times 11,000 = \$10,000$.
- This caused an incorrect denominator volume being selected, this is corrected by including a denominator volume variance in the P&L account
- To take into account this over-absorption, the P&L includes the over absorption figure :

<i>Absorption Profit and Loss</i>	\$	\$
Sales 10,000 pens @ \$100		1,000,000
Less: Full cost of sales 10,000 @ \$60		<u>600,000</u>
Gross Profit		400,000
Denominator Volume Variance	(10,000)	
Other Expenses	<u>200,000</u>	<u>190,000</u>
Net Profit		210,000

- The Variable Costing P&L remains unchanged

	\$	
Sales 10,000 pens @ \$100		1,000,000
Less Variable Cost of sales 10,000 @50		<u>500,000</u>
Contribution Margin		500,000
Fixed Production Costs	100,000	
Other Expenses	<u>200,000</u>	<u>300,000</u>
Net Profit		200,000

- In the above scenario, 1000 pens are put into inventory – absorption costing values them at \$60/ea. while Variable costing values them at \$50/ea; the difference is $1000 \times \$10 = \$10,000$. So, according to Absorption costing, \$10,000 worth of costs has been

held back in inventory to be released next year.. Hence absorption gives 10,000 more profit this year

- Remember, according to accounting conventions, only the costs incurred on goods sold goes into the P&L