

# Absorption Costing vs. Variable Costing

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## Absorption

S

CGS

GP

S&A

$NI_{ABS}$

## Variable

S

VC

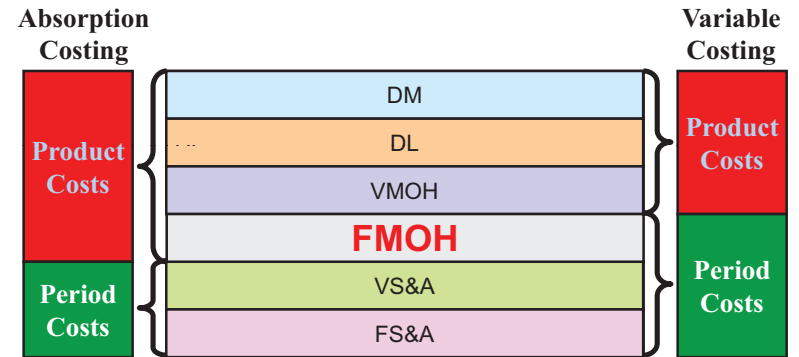
CM

FC

$NI_{VC}$

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## Overview of Absorption and Variable Costing



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## Unit Cost Computations

Harvey Company produces a single product with the following information available:

<b>Number of units produced annually</b>	<b>25,000</b>
<b>Variable costs per unit:</b>	
DM, DL, & VMOH	\$ 10
V S&A expenses	\$ 3
<b>Fixed costs per year:</b>	
FMOH	\$ 150,000
F S&A expenses	\$ 100,000

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## Unit Cost Computations

Unit **product cost** is determined as follows:

	Absorption Costing	Variable Costing
DM, DL, and VMOH	\$ 10	\$ 10
FMOH (\$150,000 ÷ 25,000 units)	6	-
<b>Unit product cost</b>	<b>\$ 16</b>	<b>\$ 10</b>

Under *absorption costing*, S&A expenses are always treated as **period expenses** and deducted from revenue as incurred.

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## Income Comparison of Absorption and Variable Costing

Let's assume the following additional information for Harvey Company.

- ♦ 20,000 units were sold during the year at a price of \$30 each.
- ♦ There were no units in beginning inventory.

Now, let's compute net operating income using both absorption and variable costing.

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## Absorption Costing

	Absorption Costing
Sales (20,000 × \$30)	\$ 600,000
Less cost of goods sold:	
Beginning inventory	\$ -
Add COGM (25,000 × \$16)	400,000
Goods available for sale	400,000
Ending inventory (5,000 × \$16)	80,000
Gross margin	280,000
Less selling & admin. exp.	
Variable (20,000 × \$3)	\$ 60,000
Fixed	100,000
Net operating income	<u>\$ 120,000</u>

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## Variable Costing

	Variable Costing
Sales (20,000 × \$30)	\$ 600,000
Less variable expenses:	
Beginning inventory	\$ -
Add COGM (25,000 × \$10)	250,000
Goods available for sale	250,000
Less ending inventory (5,000 × \$10)	50,000
Variable cost of goods sold	200,000
Variable selling & administrative expenses (20,000 × \$3)	60,000
Contribution margin	340,000
Less fixed expenses:	
Manufacturing overhead	\$ 150,000
Selling & administrative expenses	100,000
Net operating income	<u>\$ 90,000</u>

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## Comparing the Two Methods

	Cost of Goods Sold	Ending Inventory	Period Expense	Total
<b>Absorption costing</b>				
Variable mfg. costs	\$ 200,000	\$ 50,000	\$ -	\$ 250,000
Fixed mfg. costs	120,000	30,000	-	150,000
	<u>\$ 320,000</u>	<u>\$ 80,000</u>	<u>\$ -</u>	<u>\$ 400,000</u>
<b>Variable costing</b>				
Variable mfg. costs	\$ 200,000	\$ 50,000	\$ -	\$ 250,000
Fixed mfg. costs	-	-	150,000	150,000
	<u>\$ 200,000</u>	<u>\$ 50,000</u>	<u>\$ 150,000</u>	<u>\$ 400,000</u>

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## Extended Comparisons of Income Data Harvey Company Year Two

Number of units produced	25,000
Number of units sold	30,000
Units in beginning inventory	5,000
Unit sales price	\$ 30

### Variable costs per unit:

DM, DL, & VMOH	\$ 10
V S&A expenses	\$ 3

### Fixed costs per year:

FMOH	\$ 150,000
F S&A expenses	\$ 100,000

## Comparing the Two Methods

We can reconcile the difference between absorption and variable income as follows:

Variable costing net operating income	\$ 90,000
Add: FMOH deferred in inventory (5,000 units × \$6 per unit)	30,000
Absorption costing net operating income	<u>\$ 120,000</u>

$$\frac{\text{FMOH}}{\text{Units produced}} = \frac{\$150,000}{25,000 \text{ units}} = \$6.00 \text{ per unit}$$

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## Unit Cost Computations

	Absorption Costing	Variable Costing
DM, DL, VMOH	\$ 10	\$ 10
FMOH (\$150,000 ÷ 25,000 units)	6	-
Unit product cost	<u>\$ 16</u>	<u>\$ 10</u>

Since there was no change in the variable costs per unit, total fixed costs, or the number of units produced, the unit costs remain unchanged.

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## Absorption Costing

		Absorption Costing
Sales (30,000 × \$30)		\$ 900,000
Less cost of goods sold:		
Beg. inventory (5,000 × \$16)	\$ 80,000	
Add COGM (25,000 × \$16)	400,000	
Goods available for sale	480,000	
Less ending inventory	-	480,000
Gross margin		420,000
Less selling & admin. exp.		
Variable (30,000 × \$3)	\$ 90,000	
Fixed	100,000	190,000
Net operating income		<u>\$ 230,000</u>

These are the 25,000 units produced in the current period.

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## Comparing the Two Methods

We can reconcile the difference between absorption and variable income as follows:

Variable costing net operating income	\$ 260,000
Deduct: FMOH costs released from inventory (5,000 units × \$6 per unit)	30,000
Absorption costing net operating income	<u>\$ 230,000</u>

$$\frac{\text{FMOH}}{\text{Units produced}} = \frac{\$150,000}{25,000 \text{ units}} = \$6.00 \text{ per unit}$$

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## Variable Costing

		Variable Costing
Sales (30,000 × \$30)		\$ 900,000
Less variable expenses:		
Beg. inventory (5,000 × \$10)	\$ 50,000	
Add COGM (25,000 × \$10)	250,000	
Goods available for sale	300,000	
Less ending inventory	-	300,000
Variable cost of goods sold	300,000	
Variable selling & administrative expenses (30,000 × \$3)	90,000	390,000
Contribution margin		510,000
Less fixed expenses:		
Manufacturing overhead	\$ 150,000	
Selling & administrative expenses	100,000	250,000
Net operating income		<u>\$ 260,000</u>

Variable manufacturing costs only.

All fixed manufacturing overhead is expensed.

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## Comparing the Two Methods

Costing Method	1st Period	2nd Period	Total
Absorption	\$ 120,000	\$ 230,000	\$ 350,000
Variable	90,000	260,000	350,000



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## Summary of Key Insights

Relation between production and sales	Effect on inventory	Relation between variable and absorption income
Production > Sales	Inventory increases	Absorption > Variable
Production < Sales	Inventory decreases	Absorption < Variable
Production = Sales	No change	Absorption = Variable

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## CVP Analysis, Decision Making and Absorption costing

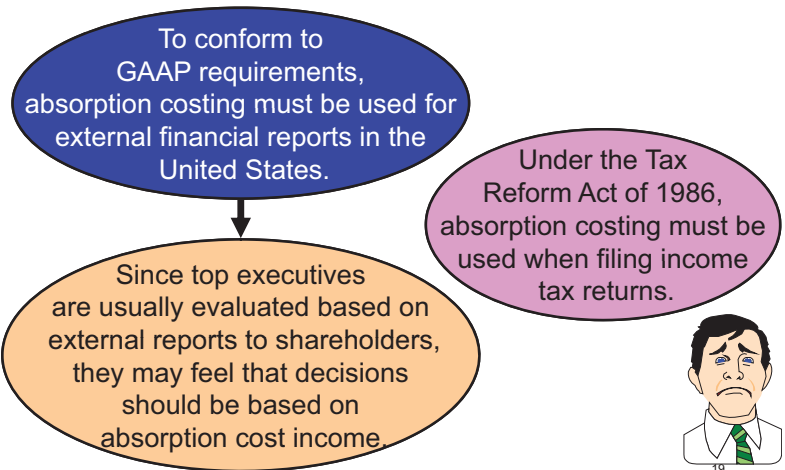
Absorption costing does not support CVP analysis because it essentially treats fixed manufacturing overhead as a variable cost by assigning a per unit amount of the fixed overhead to each unit of production.

Treating fixed manufacturing overhead as a variable cost can:

- Lead to faulty pricing decisions and keep-or-drop decisions.
- Produce positive net operating income even when the number of units sold is less than the breakeven point.

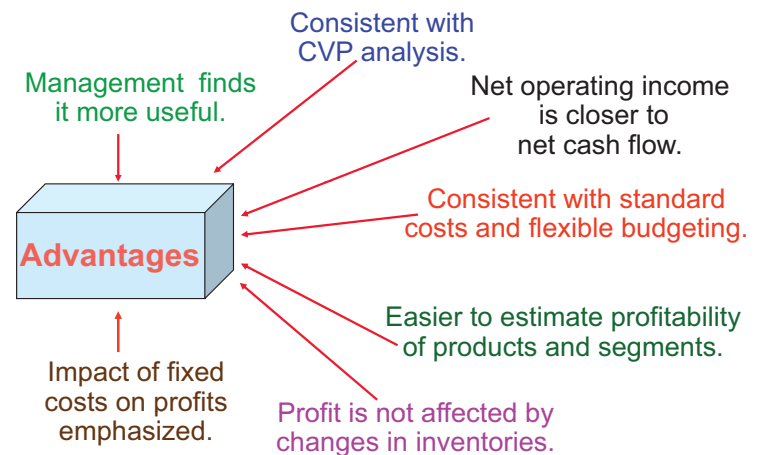
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## External Reporting and Income Taxes



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## Advantages of Variable Costing and the Contribution Approach



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## Variable versus Absorption Costing

Fixed manufacturing costs must be assigned to products to properly match revenues and costs.



**Absorption Costing**

Fixed manufacturing costs are capacity costs and will be incurred even if nothing is produced.



**Variable Costing**