

Absorption Costing vs. Variable Costing

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Absorption

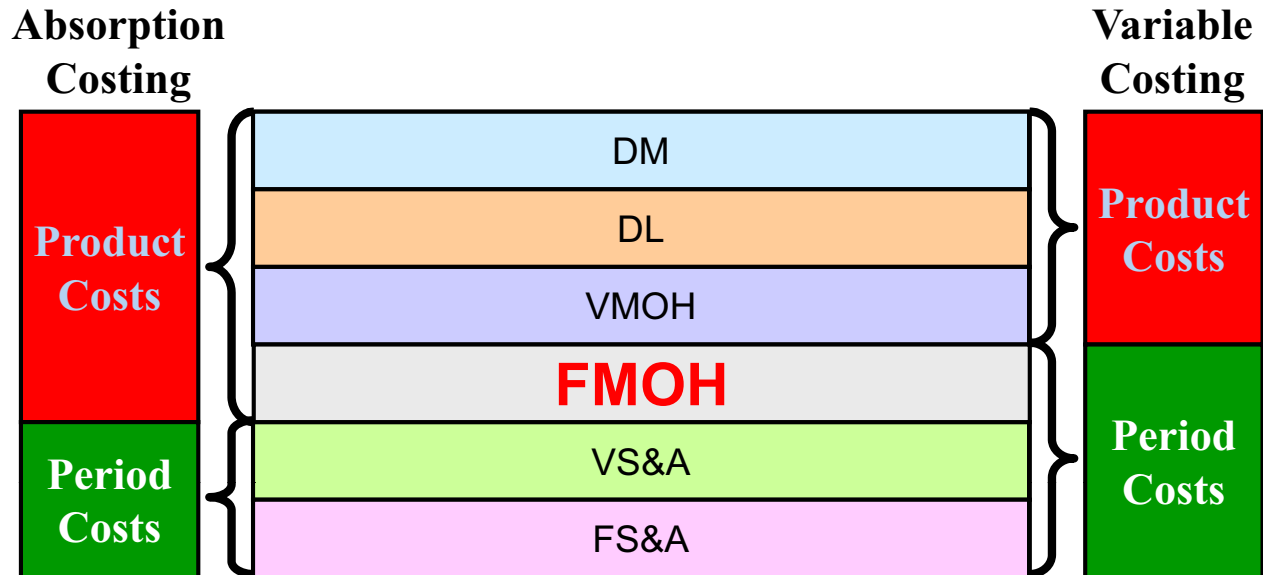
S
CGS
GP
S&A
NI_{ABS}

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:

Number of units <u>produced annually</u>	25,000
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

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Unit Cost Computations

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

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

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

	<u>Absorption Costing</u>	
Sales (20,000 × \$30)		\$ 600,000
Less cost of goods sold:		
Beginning inventory	\$ -	
Add COGM (25,000 × \$16)	<u>400,000</u>	
Goods available for sale	400,000	
Ending inventory (5,000 × \$16)	<u>80,000</u>	<u>320,000</u>
Gross margin		280,000
Less selling & admin. exp.		
Variable (20,000 × \$3)	\$ 60,000	
Fixed	<u>100,000</u>	<u>160,000</u>
Net operating income		<u><u>\$ 120,000</u></u>

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Variable Costing

	<u>Variable Costing</u>	
Sales (20,000 × \$30)		\$ 600,000
Less variable expenses:		
Beginning inventory	\$ -	
Add COGM (25,000 × \$10)	<u>250,000</u>	
Goods available for sale	250,000	
Less ending inventory (5,000 × \$10)	<u>50,000</u>	
Variable cost of goods sold	200,000	
Variable selling & administrative expenses (20,000 × \$3)	<u>60,000</u>	<u>260,000</u>
Contribution margin		340,000
Less fixed expenses:		
Manufacturing overhead	\$ 150,000	
Selling & administrative expenses	<u>100,000</u>	<u>250,000</u>
Net operating income		<u><u>\$ 90,000</u></u>

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Comparing the Two Methods

	Cost of Goods Sold	Ending Inventory	Period Expense	Total
Absorption costing				
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>
Variable costing				
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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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	\$ 120,000

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

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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

Unit Cost Computations

	<u>Absorption Costing</u>	<u>Variable Costing</u>
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.

Absorption Costing

		<u>Absorption Costing</u>	
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	<u>480,000</u>		
Less ending inventory	-		<u>480,000</u>
Gross margin			420,000
Less selling & admin. exp.			
Variable (30,000 × \$3)	\$ 90,000		
Fixed	100,000		190,000
Net operating income			<u><u>\$ 230,000</u></u>

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

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Variable Costing

		<u>Variable Costing</u>	
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	<u>300,000</u>		
Less ending inventory	-		
Variable cost of goods sold	<u>300,000</u>		
Variable selling & administrative expenses (30,000 × \$3)	90,000		<u>390,000</u>
Contribution margin			510,000
Less fixed expenses:			
Manufacturing overhead	\$ 150,000		
Selling & administrative expenses	100,000		250,000
Net operating income			<u><u>\$ 260,000</u></u>

Variable manufacturing costs only.

All fixed manufacturing overhead is expensed.

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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)	<u>30,000</u>
Absorption costing net operating income	<u><u>\$ 230,000</u></u>

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

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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

To conform to GAAP requirements, absorption costing must be used for external financial reports in the United States.

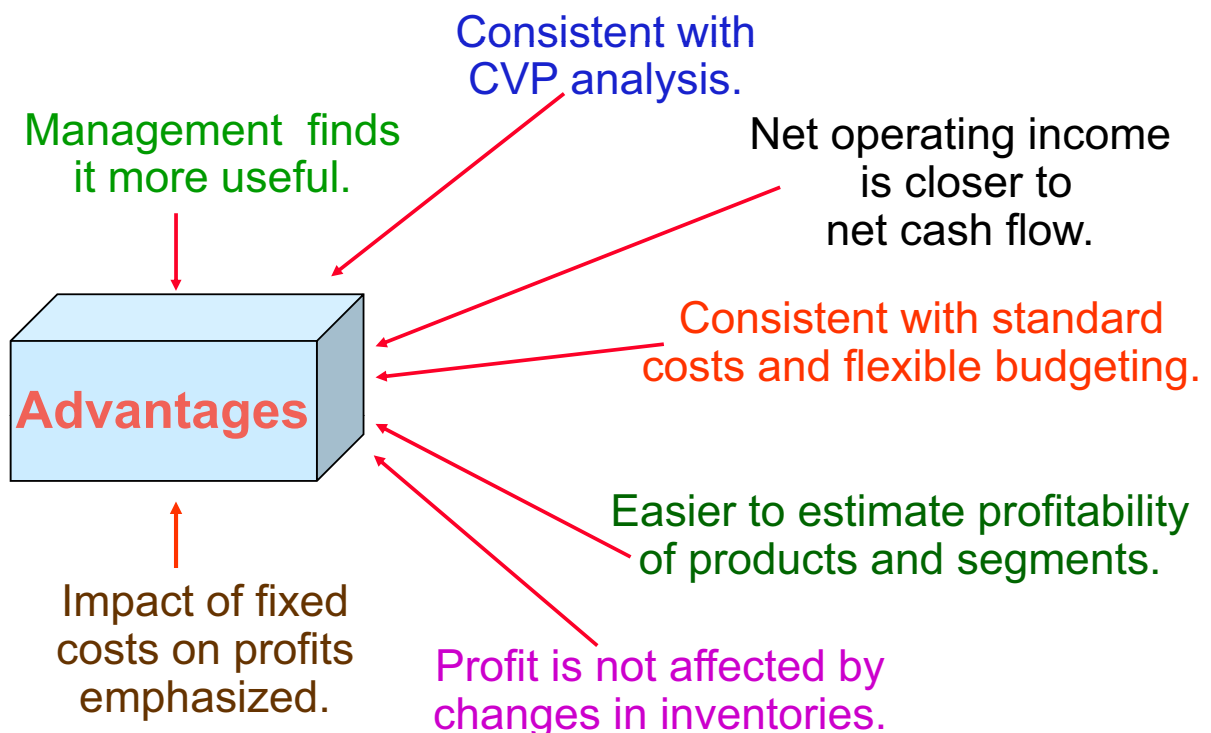
Under the Tax Reform Act of 1986, absorption costing must be used when filing income tax returns.

Since top executives are usually evaluated based on external reports to shareholders, they may feel that decisions should be based on absorption cost income.



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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**