

Appendix 11B Absorption Versus Variable Costing

In Chapter 4, we introduced two approaches to product costing: absorption (or full) costing and variable costing. Under absorption costing, all product costs (both fixed and variable) are assigned to products. In other words, both the cost of goods manufactured (COGM) and the cost of goods sold (COGS) will consist of both fixed and variable costs. In contrast, under variable costing, only the variable product costs are included in both the COGM and the COGS. Fixed manufacturing costs are treated as period costs and expensed during the accounting period.

A key question is: Why are there two approaches? Put simply, the notion of “different costs for different purposes” requires this. One purpose is financial reporting. In this regard, generally accepted accounting principles (GAAP) require that *both* fixed and variable product costs must be assigned to products for the purposes of inventory valuation. This would necessitate the use of absorption costing. The other purpose is decision making. Fixed costs may not be relevant in the case of many short-term decisions; this means that costs computed under the variable costing approach will be more useful. Nonetheless, there is a difference in the way costs are computed and presented; we now focus our attention to more clearly understanding the differences between the two systems and reconciling the differences between the two.

Product Cost Comparisons

Since there are two approaches, it is important to reconcile the net incomes obtained from these approaches. Exhibit 11B-1 captures the key differences with respect to computing product costs. As shown in the exhibit, variable manufacturing costs, that is, direct materials, direct labour, and variable manufacturing overhead, are included as product costs under both systems. These three cost items make up the variable product costs—the variable costing approach stops with this computation. In contrast, the absorption costing approach goes one step further—it assigns fixed manufacturing overhead to products. In doing so, the absorption costing approach includes *all* manufacturing costs in computing product costs. Selling and administrative expenses are treated as period costs under both systems.

It is important to note that the product cost difference between the two systems arises only due to the differential treatment of fixed manufacturing costs while computing product costs.

Exhibit 11B-1

Computation of Product Costs Under Absorption and Variable Costing

Absorption Costing		Variable Costing
Included	DIRECT MATERIALS DIRECT LABOUR VARIABLE MANUFACTURING OVERHEAD	Included
	FIXED MANUFACTURING OVERHEAD	Not included

We now use an example to illustrate the impact of the different approaches in product costing on net income (for simplicity, we ignore taxes). Exhibit 11B–2A presents the data for a representative year of The Manufacturing Company, and Exhibit 11B–2B presents the product cost information under the two methods. As shown in the exhibit, the unit product cost is \$17 under absorption costing and \$12 under variable costing. The difference of \$5 is the fixed manufacturing overhead per unit which is not included under the variable costing approach.

Exhibit 11B–2A
Relevant Information
for The Manufacturing
Company

Beginning inventory	0 units
Production during the year	8,000 units
Sales during the year	6,000 units
Ending inventory	2,000 units
Selling price per unit	\$ 30 per unit
Variable costs per unit:	
Direct materials	\$4
Direct labour	6
Manufacturing overhead	2
Selling & administrative expenses	3
Fixed costs per year:	
Manufacturing overhead	\$ 40,000
Selling and administrative expenses	12,000

Exhibit 11B–2B
Unit Product Costs

	Absorption Costing	Variable Costing
Direct materials	\$ 4	\$ 4
Direct labour	6	6
Variable manufacturing overhead	2	2
Fixed manufacturing overhead*	<u>5</u>	<u>—</u>
Total product cost per unit	<u>\$17</u>	<u>\$12</u>

* Fixed manufacturing overhead per unit is computed as follows:
\$40,000 ÷ 8,000 units = \$5.

Exhibit 11B–3 presents the income statements for the year under the two approaches. As shown in the exhibit, absorption costing income is higher by \$10,000 as compared with the variable costing income. The key factors leading to the difference are captured in the following table:

Exhibit 11B–3
Absorption and Variable
Costing Income Statements

<i>Absorption Costing Income Statement</i>		
Sales (6,000 units at \$30 per unit)		\$180,000
Less: Cost of goods sold		
Beginning inventory	\$ —	
Add: Cost of goods manufactured (8,000 units @ \$17 per unit)	136,000	
Deduct: Ending inventory (2,000 units @ \$17 per unit)	<u>34,000</u>	<u>102,000</u>
Gross margin		78,000
Less: Selling and administrative expenses		
Variable (6,000 units @ \$3 per unit)	18,000	
Fixed	<u>12,000</u>	<u>30,000</u>
Net income		<u>\$ 48,000</u>

continued

Variable Costing Income Statement		
Sales (6,000 units @ \$30 per unit)		\$180,000
Less: Variable expenses		
Variable cost of goods sold:		
Beginning inventory	\$ —	
Add: Cost of goods manufactured (8,000 units @ \$12 per unit)	\$96,000	
Deduct: Ending inventory (2,000 units @ \$12 per unit)	<u>\$24,000</u>	\$72,000
Variable selling and administrative expenses (6,000 units @ \$3 per unit)		<u>\$18,000</u>
Contribution margin		\$90,000
Less: Fixed expenses		
Manufacturing overhead	\$40,000	
Selling and administrative expenses	<u>\$12,000</u>	<u>\$52,000</u>
Net income		<u>\$38,000</u>

	Absorption Costing	Variable Costing	Difference
Cost of goods sold	\$102,000	\$72,000	\$ 30,000
Fixed period costs	12,000	52,000	(40,000)
Net income	\$ 48,000	\$38,000	\$ 10,000

The \$30,000 difference in the COGS arises from assigning the fixed manufacturing overhead of \$5 per unit to the 6,000 units sold. Under the absorption costing approach, the fixed manufacturing overhead of \$40,000 is treated as a product cost. This means that it is assigned to the 8,000 units produced as follows:

- \$30,000 to the 6,000 units sold (as part of the COGS)
- \$10,000 to the 2,000 units in ending finished goods inventory

Consequently, \$30,000 flows through to the income statement, whereas the remaining \$10,000 flows through to the balance sheet. The amount of \$10,000 that does not flow through to the income statement results in the absorption costing income to be higher by that much. Note, however, that some or all of this \$10,000 will flow from the balance sheet to the income statement in future periods as and when units in the ending inventory are sold.


In contrast, under the variable costing approach the entire fixed manufacturing overhead is treated as a period cost and written off during the period in which it is incurred. Therefore, the entire amount flows through to the income statement. This is why the fixed period costs are higher by \$40,000 under the variable costing approach.

There are two situations under which both absorption and variable costing incomes will be the same. First, incomes will be the same whenever there is no change in inventory levels during the accounting period (meaning that ending inventory is the same as beginning inventory). Second, if the organization adopts a just-in-time inventory model and reduces its inventory levels to zero or near zero the incomes under the two methods will be similar. Essentially the difference in income under the two approaches exists when units in ending inventory are different from the units in beginning inventory; this difference can be reconciled as follows:

Reconciliation	
Absorption costing income	
Variable costing income	
+ (Ending inventory in units × fixed manufacturing costs per unit)	
− (Beginning inventory in units × fixed manufacturing costs per unit)	

The absorption costing income is higher (lower) than the variable costing income if the ending inventory is higher (lower) than the beginning inventory. In our example, the difference between ending and beginning inventory levels is 2,000 units. At fixed overhead of \$5 per unit, this amounts to \$10,000—same as the difference between absorption and variable costing incomes. One consequence of using the absorption costing approach is that companies can manage short-term income by managing inventories. Compared with the previous period, if the units in ending inventory are more than the units in beginning inventory, absorption costing income in the current period will be higher than the previous period's income.

Application Competency Summary for Appendix 11B

Application Competency	Deliverable	Source Documents and Key Information	Steps	Knowledge Competency
Prepare absorption costing and variable costing income statements.  CC17 ^B	<i>Key Information</i> Gross margin and net income Contribution margin and net income <i>Report/Document</i> Income statements	<i>Sales, Cost/Expense Accounts in the general Ledger</i> Actual sales, variable and fixed costs <i>Master Budget</i> Budgeted sales, variable and fixed costs (for budgeted reports)	<i>Absorption Costing Income Statement</i> 1. Compute the cost of goods sold (COGS), using both the variable and fixed product costs. 2. Deduct the COGS from sales revenue to compute the gross margin. 3. Deduct the variable and fixed selling and administrative expenses from the gross margin to compute net income. <i>Variable Costing Income Statement</i> 1. Deduct the variable expenses from sales revenues to compute the contribution margin. 2. Deduct fixed product and period costs from the contribution margin to compute the net income.	Variable and fixed costs Product and period costs Contribution margin

Question for Appendix 11B

11–13 How do absorption costing and variable costing differ in how they treat fixed manufacturing overhead costs?

Brief Exercises for Appendix 11B

BRIEF EXERCISE 11–17 Absorption Costing (CC16^B)

The following data are available for Kenora Products for the month of March:

Beginning inventory of finished goods	0 units
Units produced in March	1,000 units
Units sold in March	900 units
Fixed manufacturing costs	\$380,000

Required:

Compute the difference between the absorption and variable costing incomes for the month of March. Which will be higher?

BRIEF EXERCISE 11–18 Absorption Versus Variable Costing (CC16^B, 17^B)

The choice between absorption costing and variable costing may have a significant effect on the apparent profitability of a company.

Required:

State two arguments in favour of: (1) absorption costing and (2) variable costing.

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Exercise for Appendix 11B

EXERCISE 11–14 Absorption Versus Variable Costing (CC16^B, 17^B)

Amalgam Corporation Ltd. (ACL) prepares external financial statements using absorption costing and internal financial statements using variable costing. You have the following information regarding the operations of ACL for the past two years:

	2010	2011
Sales in units (@ \$35 per unit)	25,000	35,000
Production in units	30,000	30,000
Variable production costs per unit	\$ 20	\$ 20
Fixed production costs	120,000	120,000
Fixed marketing costs	50,000	50,000
Beginning inventory	Nil	0

Required:

1. Prepare absorption costing income statements for the years ended December 31, 2010 and 2011. Include a column for totals for the two years.
2. Prepare variable costing income statements for the years ended December 31, 2010 and 2011. Include a column for totals for the two years.
3. Reconcile the differences in net income under the two methods.

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Problem for Appendix 11B

CHECK FIGURE

(2) \$3,300

PROBLEM 11–16 Absorption and Variable Costing Income Statement (CC16^B, 17^B)

Kronus Ltd. produces alarm clock radios with CD players built into them. Kronus had the following results for January 2011:

Units	
Beginning inventory	0
Production	1,000
Sales	900
Ending inventory (all units are finished at the end of the period— there is no work in process)	100
Costs	
Variable manufacturing costs per unit:	
Direct materials	\$ 10
Direct labour	5
Variable manufacturing overhead	3
Variable marketing costs per unit	2
Fixed manufacturing overhead	8,000
Fixed marketing and administrative costs	12,000
Sales price per unit	\$ 45

Required:

1. Prepare in good form a variable-costing format income statement for Kronus for the month of January.
2. Prepare in good form an absorption-costing format income statement for Kronus for the month of January.
3. Prepare a schedule reconciling the net incomes for January under the variable and absorption costing methods.

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