**Module 3 - Case**

**COST BEHAVIOR**

**Assignment Overview**

**Jokkmok Industries**

Mr. Rosen is the manager of a division of Jokkmok Industries. He is one of several managers being considered for the position of CEO, as the current CEO is retiring in a year.

All divisions use standard absorption costing. The division has the capacity to produce 50,000 units a quarter and quarterly fixed overhead amounts to $800,000. Mr. Rosen has been looking at the report for the first three months of the year and is not happy with the results.

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| **Division Income Statement** |
| **For the Quarter Ending March 31, 2014** |
| Production: 25,000 units |   |   |
| Sales (25,000 units) |   | $2,500,000 |
| Cost of goods sold |   | 1,800,000 |
| Gross profit |   | $700,000 |
| Selling & general expenses |   | 300,000 |
| Net income |   | $400,000 |

The sales forecast for the second quarter is 25,000 units. Mr. Rosen had budgeted second quarter production at 25,000 units but changes it to 50,000 units, which is total capacity for a quarter. The sales forecasts for each of the last two quarters of the year remain at 25,000 units. Actual fixed costs incurred remain constant in total and variable costs remain constant on per unit basis. All selling & general expenses are fixed.

**Case Assignment**

**Required:**

Computations:

* Convert the divisional absorption income statement to a contribution margin income statement for the quarter. See example below showing how to convert from one approach to another. This example is for guidance only and the numbers have no bearing on Jokkmok Industries. You can also find several videos on YouTube that explain the difference between the two types of income statements.
* Prepare absorption and contribution margin income statements for the succeeding quarter for the division.
* Compute production costs per unit for both approaches and for both quarters.

Discussion:

* Did Mr. Rosen improve his performance for the second quarter? Indicate the information you used for your assessment.
* Can you make any suggestions for reporting in the future?
* Do you think Mr. Rosen should be seriously considered for the CEO position? Why or why not?
* Discuss three shortcomings of the absorption approach for internal decision-making.

**Assignment Expectations**

It is important to answer the questions as posed. The discussion should be 4 to 6 pages and written in a clear and concise manner. Support your discussion with references in APA format. You are encouraged to use Excel or other compatible spreadsheet when computations are involved.

Example:

<http://www.accounting4management.com/income_comparison_of_variable_and_absorption_costing.htm>

Income Comparison of Variable  and Absorption Costing:

**Learning Objectives:**

1. Prepare income statements using variable costing and absorption costing.
2. Why net operating income usually different under variable and absorption costing methods?

**The income statements prepared under**[absorption costing](http://www.accounting4management.com/absorption_costing_definition.htm)**and**[**variable costing**](http://www.accounting4management.com/variable_costing_definition.htm)**usually produce different**[**n**](http://www.accounting4management.com/net_operating_income.htm)[**et operating income**](http://www.accounting4management.com/net_operating_income.htm)**figures**. This difference can be quite large. Here we will explain the basic reason of this difference in income. The explanation for this difference needs two separate income statements one under [**absorption costing**](http://www.accounting4management.com/absorption_costing_definition.htm) and other under[**variable costing**](http://www.accounting4management.com/variable_costing_definition.htm). We will prepare two income statements that will produce different income figures and then explain the reasons of difference. Consider the following example:

Example:

Following data relates to a manufacturing company:

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| Number of units produced each year | 6,000 |
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| **Variable cost per unit:** |  |
| Direct materials | $2 |
| Direct labor | $4 |
| Variable Manufacturing Overhead | $1 |
| Variable selling and Administrative expenses | $3 |
|  |  |
| **Fixed costs per year:** |  |
| Fixed manufacturing overhead | $30,000 |
| Fixed selling and administrative expenses | $10,000 |
|  |  |
| Units in beginning inventory | 0 |
| Units produced | 6,000 |
| [Units Sold](http://web.safesear.ch/?t=cp&q=Units%20Sold) | 5,000 |
| Units in ending inventory | 1,000 |
| Selling price per unit | $20 |
|  |  |
| **Selling and administrative expenses:** |  |
| Variable per unit | $3 |
| Fixed per year | $10,000 |

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**Required:**

1. Prepare income statements using:
**a**. Absorption costing system
**b**. Variable costing system
2. Prepare a reconciliation schedule

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| **Absorption Costing Income Statement** |
| Sales (5,000 units×$20 per unit) | $100,000 |
|  | ———- |
| **Less cost of goods sold:** |  |
| Beginning inventory | $0 |
| Add Cost of goods manufactured (6,000 units×$12per unit) | $72,000 |
|  | ———- |
| Goods available for sale | $72,000 |
| Less ending inventory | $12,000 |
|  | ———- |
| Cost of goods sold | $60,000 |
|  | ———- |
| Gross Margin ($100,000 – $60,000) | $40,000 |
|  | ———- |
| **Less selling and administrative expenses** |  |
| Variable selling and administrative expenses (5,000 × 3) | $15,000 |
| Fixed selling and administrative expenses | $10,000 |
|  | ——— |
|  | $25,000 |
|  | ———- |
| Net operating income ($40,000 – $25,000) | $15,000 |
|  | ======== |
|  |  |
| **Variable Costing Income Statement** |
| Sales ($5,000units×$20 per unit) | $100,000 |
|  | ———— |
| **Less variable expenses:** |  |
| *Variable cost of goods sold:* |  |
| Beginning inventory | $0 |
| Add variable manufacturing costs (6,000 units×$7 per unit) | $42,000 |
|  | ———– |
| Goods available for sale | $42,000 |
| Less ending inventory (1,000 units×$7 per unit) | $7,000 |
|  | ——— |
| Variable cost of goods sold | $35,000 |
| variable selling and administrative expenses(5,000 units × $3 per unit) | $15,000 |
|  | ——— |
|  | 50,000 |
|  | ———- |
| Contribution margin ($100,000 − $50,000) | 50,000 |
|  | ———- |
| **Less fixed expenses:** |  |
| Fixed manufacturing overhead | $30,000 |
| Fixed selling and administrative expenses | $10,000 |
|  | ——— |
|  | $40,000 |
|  | ——— |
| Net operating Income ($50,000 − $40,000) | $10,000 |
|  | ======= |
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The income statements prepared above have different [net operating income](http://www.accounting4management.com/net_operating_income.htm) figures. Now we will explain why [net operating income](http://www.accounting4management.com/net_operating_income.htm) is different under both the costing systems.

Explanation:

**Several points can be noted from the income statements prepared above:**

Under [absorption costing](http://www.accounting4management.com/absorption_costing_definition.htm) if inventories increase then some of the fixed manufacturing costs of the current period will not appear on the income statement as part of [cost of goods sold](http://www.accounting4management.com/cost_of_goods_sold_definition.htm). Instead, these costs are deferred to a future period and are carried on the balance sheet as part of the inventory account. Such a deferral of cost is known as [fixed manufacturing overhead deferred in inventory](http://www.accounting4management.com/fixed_manufacturing_overhead_deferred_definition.htm). The process involved can be explained by referring to income statements prepared above. During the current period 6,000 units have been produced but only 5,000 units have been sold leaving 1,000 unsold units in the ending inventory. Under the absorption costing system each unit produced was assigned $5 in fixed overhead cost. Therefore each unit going into inventory at the end of the period has $5 in fixed manufactured overhead cost attached to it, or a total of $5,000 for 1,000 units (1,000 × $5). This fixed manufacturing overhead cost of the current period deferred in inventory to the next period, when hopefully these units will be taken out of inventory and sold. This deferral of $5,000 of fixed manufacturing overhead costs can be clearly seen by analyzing the ending inventory under the absorption costing method:

|  |  |
| --- | --- |
| Variable manufacturing costs (1000units × $7 per unit) | $7,000 |
| Fixed manufacturing overhead costs (1,000 × $5 per unit) | $5,000 |
|  | ——— |
| Total ending inventory value | $12,000 |
|  | ======= |

In summary, under absorption costing, of the $30,000 in fixed manufacturing overhead costs incurred during the period, only $25,000 (5,000 $ per unit) has been included in the cost of goods sold. The remaining $5000 (1000 units not sold  $5 per unit) has been deferred in inventory to the next period.

Under variable costing method the entire $30,000 in fixed manufacturing overhead costs has been treated as an expense of the current period (see the bottom portion of the variable costing income statement).

The ending inventory figure under the variable costing method is $5,000 lower than it is under the absorption costing method. The reason is that under variable costing, Only the variable manufacturing costs are assigned to units of product and therefore included in the inventory:

Variable manufacturing costs (1000units × $7 per unit)

$7,000

The $5,000 difference in ending inventories explains the difference in net operating incomereported between the two costing methods. Net operating is $5,000 higher under absorption costing since, as explained above, $5,000 of fixed manufacturing overhead cost has been deferred in inventory to the next period under that costing method. Hopefully,  when the units relating to this $5,000 fixed cost will be sold in the next period the cost attached to these units will be included in the cost of goods sold of the next period. This is called  [fixed manufacturing overhead cost released from inventory](http://www.accounting4management.com/fixed_manaufacturing_overhead_released_definition.htm).

The absorption costing system makes no distinction between fixed and variable costs; therefore, it is not well suited for [CVP](http://web.safesear.ch/?t=cp&q=CVP) computations, which are important for good planning and control. To generate data for [cost volume profit (CVP) analysis](http://www.accounting4management.com/cost_volume_profit_analysis.htm), it would be necessary to spend considerable time reworking and reclassifying costs on the absorption statement.

The variable costing approach to costing units of product works very well with the contribution approach to the income statement, since both concepts are based on the idea of classifying costs by behavior. The variable costing data could be immediately used in [cost volume profit](http://www.accounting4management.com/cost_volume_profit.htm)