A

Concept Integration Report

on

Absorption Costing V/S Variable Costing

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❖ Absorption Costing

Absorption costing is defined as a method for accumulating the costs associated with a production process and apportioning them to individual products. This type of costing is required by the accounting standards to create an inventory valuation that is stated in an organization's balance sheet.

A product may absorb a broad range of fixed and variable costs. These costs are not recognized as expenses in the month when an entity pays for them. Instead, they remain in inventory as an asset until such time as the inventory is sold; at that point, they are charged to the cost of goods sold.

Absorption Costing Components

The key costs assigned to products under an absorption costing system are

- **Direct materials:** Those materials that is included in a finished product.
- **Direct labor:** The factory labor costs required to construct a product.
- **Variable manufacturing overhead:** The costs to operate a manufacturing facility, which vary with production volume. Examples are supplies and electricity for production equipment.
- **Fixed manufacturing overhead:** The costs to operate a manufacturing facility, which do not vary with production volume. Examples are rent and insurance.

It is possible to use activity-based costing (ABC) to allocate overhead costs for inventory valuation purposes under the absorption costing methodology. However, ABC is a time-consuming and expensive system to implement and maintain, and so is not very cost-effective when all you want to do is allocate inventory to be in accordance with GAAP or IFRS.

You should charge sales and administrative costs to expense in the period incurred; do not assign them to inventory, since these items are not related to goods produced, but rather to the period in which they were incurred.

Absorption Costing Steps

The steps required to complete a periodic assignment of costs to produced goods is:

1. Assign costs to cost pools: This is comprised of a standard set of accounts that are always included in cost pools, and which should rarely be changed.
2. Calculate usage: Determine the amount of usage of whatever activity measure is used to assign overhead costs, such as machine hours or direct labor hours used.
3. Assign costs: Divide the usage measure into the total costs in the cost pools to arrive at the allocation rate per unit of activity, and assign overhead costs to produced goods based on this usage rate.

Overhead Absorption

Absorbed overhead is manufacturing overhead that has been applied to products or other cost objects. Overhead is usually applied based on a predetermined overhead allocation rate. Overhead is **over absorbed** when the amount allocated to a product or other cost object is higher than the actual amount of overhead, while the amount is **under absorbed** when the amount allocated is lower than the actual amount of overhead.

For example, Higgins Corporation budgets for a monthly manufacturing overhead cost of Rs1,00,000, which it plans to apply to its planned monthly production volume of Rs50,000 widgets at the rate of Rs2 per widget. In January, Higgins only produced 45,000 widgets, so it allocated just Rs90,000. Also, the actual amount of manufacturing overhead that the company incurred in that month was Rs98,000. Therefore, Higgins experienced Rs8,000 of underabsorbed overhead.

In February, Higgins produced 60,000 widgets, so it allocated Rs120,000 of overhead. Also, the actual amount of manufacturing overhead that the company incurred in that month was Rs109,000. Therefore, Higgins experienced Rs11,000 of overabsorbed overhead.

Absorption Costing Problems

Since absorption costing requires the allocation of what may be a considerable amount of overhead costs to products, a large proportion of a product's costs may not be directly traceable to the product. Direct costing or constraint analysis do not require the allocation of overhead to a product, and so may be more useful than absorption costing for incremental pricing decisions where you are more concerned with only the costs required to build the next incremental unit of product.

It is also possible that an entity could generate extra profits simply by manufacturing more products that it does not sell. This situation arises because absorption costing requires fixed manufacturing overhead to be allocated to the total number of units produced - if some of those units are not subsequently sold, then the fixed overhead costs assigned to the excess units are never charged to expense, thereby resulting in increased profits. A manager could falsely authorize excess production to create these extra profits, but it burdens the entity with potentially obsolete inventory, and also requires the investment of working capital in the extra inventory.

❖Variable Costing

Variable Costing is a managerial accounting cost concept. Under this method, manufacturing overhead is incurred in the period that a product is produced. This addresses the issue of absorption costing that allows income to rise as production rises. Under an absorption cost

method, management can push forward costs to the next period when products are sold. This artificially inflates profits in the period of production by incurring less cost than would be incurred under a variable costing system. Variable costing is generally not used for external reporting purposes. Under the Tax Reform Act of 1986, income statements must use absorption costing to comply with GAAP.

Modern approach to product costing. Includes only variable production cost, (direct material + direct labor and variable overhead) as product or inventoriable cost, and fixed overhead as period cost that's why known as variable costing or direct costing , or marginal costing as cost of producing an extra unit will be same as variable cost.

Appropriate more for internal reporting, facilitates decision making by using, models for analyzing break even, cost volume profit analysis, margin of safety and degree of operating leverage etc.

Like absorption costing, considers all non manufacturing cost as period cost but variable costing statements , typically present expense by cost behavior (variable and fixed in relation to sales).

❖ Absorption V/S Variable Costing

A.) Comparison of Absorption and Variable Costing: When comparing absorption costing and variable costing income statements, a number of points should be noted:

1. Deferral of fixed manufacturing costs under absorption costing. Under absorption costing, if inventories increase then a portion of the fixed manufacturing overhead costs of the current period is deferred to future periods in the inventory account. When the units are later taken out of inventory and sold, the deferred fixed costs flow through to the income statement as part of cost of goods sold.

2. Differences in inventories under the two methods. The ending inventory figures under the variable costing and absorption costing methods are different. Under variable costing, only the variable manufacturing costs are included in inventory. Under absorption costing, both variable and fixed manufacturing costs are included in inventory.

3. Suitability for CVP analysis. An absorption costing income statement is not well suited for providing data for CVP computations since it makes no distinction between fixed and variable costs. In contrast, the variable costing method classifies costs by behavior and is very useful in setting-up CVP computations.

B.) Extended Comparison of Income Data:

(All of these generalizations assume the LIFO inventory flow assumption is being used. The generalizations may not hold in some rare cases if a company uses an inventory flow assumption other than LIFO.)

1. Production equals sales (no change in inventories). When production equals sales, inventories do not change. If inventories do not change, then there is no change in the fixed manufacturing overhead costs in inventories under absorption costing. Therefore, under both costing methods all of the current fixed manufacturing overhead will flow through to the income statement as an expense. In the case of absorption costing it will be part of cost of goods sold. In the case of variable costing, it will be a period expense.

2. Production exceeds sales (inventories increase). When production exceeds sales, inventories grow. If inventories grow, then some of the current fixed manufacturing overhead costs will be deferred in inventories under absorption costing. Since all of the current fixed manufacturing overhead costs are expensed under variable costing, the net operating income reported under absorption costing will be greater than the net operating income reported under variable costing.

3. Sales exceed production (inventories decrease). When sales exceed production, inventories shrink. If inventories decrease, then some of the fixed manufacturing overhead costs that had been deferred in inventories in previous periods will be released to the income statement as part of cost of goods sold as well as all of the current fixed manufacturing overhead costs. Since only the current fixed manufacturing overhead costs are expensed under variable costing, the net operating income reported under absorption costing will be less than the net operating income reported under variable costing.

4. Long-term differences in income. Over an extended period of time, the cumulative net operating income figures reported under absorption costing and variable costing will be about the same; they will differ only by the amount of fixed manufacturing overhead cost in ending inventories under absorption costing. Cumulative net operating income figures will be identical whenever ending inventories are reduced to zero.

5. Changes in production volume. Variable costing net operating income is not affected by changes in production volume. On the other hand, absorption costing net operating income is affected by changes in production volume. For any given level of sales, net operating income under absorption costing will increase as the level of output increases and hence inventories increase.

C.) The Matching Principle: Accountants and managers have been arguing for decades concerning the relative merits of absorption and variable costing. In practice, absorption costing is used far more than variable costing even for internal reports. The reasons for this are not entirely clear, although the perception that absorption costing is required for external reporting

undoubtedly plays a key role. The argument for using absorption costing in external reports seems to be based on the matching principle.

1. Argument for absorption costing. Advocates of absorption costing argue that all manufacturing costs must be assigned to units of product so as to properly match costs with revenues. They argue that fixed manufacturing overhead costs are essential to the production process and must be included when costing units of product, regardless of how the cost behaves.

2. Argument for variable costing. Advocates of variable costing argue that fixed manufacturing overhead costs are incurred in order to have the capacity to produce. Moreover, they will be incurred regardless of whether anything is actually produced. Since these costs are not caused by any particular unit of product and are incurred to provide capacity for a particular period, the matching principle would dictate that fixed manufacturing overhead costs must be expensed in the current period.

D.) Impact of JIT Inventory Methods: When companies use JIT methods for controlling their operations, the distortions of income that can occur under absorption costing largely (or completely) disappear.

1. The cause of distortions in net operating income. Erratic movements in net operating income under absorption costing and the differences in net operating income between absorption and variable costing can be traced to changing levels of inventory. When inventory levels are constant or negligible, absorption costing and variable costing methods yield the essentially same net operating income.

2. The JIT solution. Under an ideally functioning JIT system, goods are produced strictly to customers' orders. Finished goods inventories almost disappear and work in process inventories are kept to a minimum. With little or no inventories, fixed manufacturing overhead costs cannot be shifted between periods under absorption costing. As a result, both variable and absorption costing will show essentially the same net operating income figure, and the net operating income under absorption costing will move in the same direction as movements in sales.

❖Difference between the two approaches

Two basic differences can be seen between Variable and absorption costing

- The first difference is that under absorption costing fixed manufacturing overhead is considered as product cost, because this approach advocates that product cannot be made without the capacity provided by manufacturing cost, whereas as under direct costing fixed overhead is considered as period cost because this approach advocates fixed manufacturing would be incurred whether or not production occurs,that is they are not caused by production.

- The second difference is in the presentation of cost on the income statement, absorption costing classifies expense as function (cost for same purpose, to generate revenue) whereas variable costing categorize expense, first by behavior (variable, fixed) and further by function.

Calculating profit under variable and absorption costing:

Clearly, a product cost under variable costing will always be lower than absorption costing but the difference between variable and absorption costing profits depends on the relationship between volume of sales and volume of production .

When	**profit**	**ending inventory (ac vs vc)**
Production =sales	ac = vc	no change
Production > sales	ac> vc (by amount fixed overhead in ending inventory minus fixed overhead beginning inventory)	increased by (fixed overhead in additional units as p > s)
Production < sales	ac< vc (by amount fixed overhead released from ac beginning inventory)	difference reduced (by fixed overhead from beginning inventory to charged to cogs)
Ac= absorption costing, vc= variable costing,		

❖ Approaches of variable costing & absorption costing:

➢ Valuation of inventory:

In the financial accounting area there is strong argument of using absorption costing to value inventory, according to financial accounting concepts cost can never be expensed until their disposition is realized, advocates of absorption costing claim that fixed cost comprise part of the cost of production. There is no strong argument for using variable costing to value inventory for financial reporting purpose.

➢ Short term decision making:

Variable cost are particularly useful for short term decisions, for example manager often need to decide to make a component or buy it, a business may choose to buy a product if the

supplier's price is less than variable cost of the product, often the fixed cost will be incurred, regardless, whether product is made or bought so they are not relevant to decision. So marginal costing is a good choice in this case because absorption costing, cost include fixed overhead, so using these product cost, can lead to erroneous decisions in short term, because fixed cost do not change in short term. However in long term a business must cover its fixed cost too, and managers prefer to use absorption costing data.

- **Profit information:**

Under variable costing, profit is easier to predict. Profit is a function of sales, and the classification of cost as fixed or variable makes it simple to project the effects of change in sale on profit. Cost volume profit analysis (cvp analysis) an important decision making and planning tool, used by managers which require a variable costing format.

When absorption costing is used there is no direct relationship between sales and profit because of the unitized cost include in the product cost, some mangers find it confusing and difficult to predict the effect on profit on change in sales, we can say absorption costing is not compatible with cost volume profit analysis.

- **Planning and control:**

Managers achieved control by comparing actual and planned performance , planned cost must take account cost behavior, if they are to provide reliable basis for control, profit is also used as performance measure, on the other side because of its disregard to cost behavior , absorption costing provides a poor basis for planning and control. They encourage managers to improve their profit performance by simply building up inventories , fixed overhead costs are carried forward as inventory rather than expensed , during the current period , but its not really the true profit , more inventory means more cost in handling, storage and insurance, which is against grain of new management approaches like jit and tqm .

❖Advantages and disadvantages of Absorption Costing & Variable costing

What are advantages and disadvantages of Absorption costing system?

Advantage of Absorption Costing

1. Absorption costing recognizes fixed costs in product cost. As it is suitable for determining price of the product. The pricing based on absorption costing ensures that all costs are covered.

2. Absorption costing will show correct profit calculation than variable costing in a situation where production is done to have sales in future (eg. seasonal production and seasonal sales).

3. Absorption costing conforms with accrual and matching accounting concepts which requires matching costs with revenue for a particular accounting period.

4. Absorption costing has been recognized for the purpose of preparing external reports and for stock valuation purposes.

5. Absorption costing avoids the separating of costs into fixed and variable elements.

6. The allocation and apportionment of fixed factory overheads to cost centers makes manager more aware and responsible for the cost and services provided to others.

Disadvantages of Absorption Costing System

1. Absorption costing is not useful for decision making. It consider fixed manufacturing overhead as product cost which increase the cost of output. As a result, it does not help in accepting specially offered price for the product. Various types of managerial problems relating to decision making can be solved only with the help of variable costing system.

2. Absorption costing is not helpful in control of cost and planning and control functions. It is not useful in fixing the responsibility for incurrence of costs. It is not practical to hold a manager accountable for costs over which he/she has not control.

3. Some current product costs can be remove from the income statement by producing for inventory. As such, managers who are evaluated on the basis of operating income can temporarily improve profitability by increasing production.

What are advantages and disadvantages of variable costing system?

Companies need absorption costing to prepare statements to satisfy external parties and variable costing for better management. Both the costing methods have benefits and limitations. Following are the main advantages and disadvantages of variable costing system:

Advantage of Variable Costing

1. Variable costing provides a better understanding of the effect of fixed costs on the net profits because total fixed cost for the period is shown on the income statement.

2. Various methods of controlling costs such as standard costing system and flexible budgets have close relation with the variable costing system. Understanding variable costing system makes the use of those methods easy.
3. Companies using variable costing system prepare income statement in contribution margin format that provides necessary information for cost volume profit (CVP) analysis. This data cannot be directly obtained from a traditional income statement prepared under absorption costing system.
4. The net operating income figure produced by variable costing is usually close to the flow of cash. It is useful for businesses with a problem of cash flows.
5. Under absorption costing system, income of different periods changes with the change of inventory levels. Sometime income and sales move in opposite directions. But it does not happen under variable costing.

Disadvantage of Variable Costing

1. Financial statements prepared under variable costing method do not conform to generally accepted accounting principles (GAAP). The auditors may refuse to accept them.
2. Tax laws of various countries require the use of absorption costing.
3. Variable costing does not assign fixed cost to units of products. So the production costs cannot be truly matched with revenues.
4. Absorption costing is usually the base for evaluating top executive's efficiency.

❖ The difference between variable and absorption costing. How unit product cost is computed under two methods?

- Variable and absorption are two different costing methods. Almost all successful companies in the world use both the methods. Variable costing and absorption costing cannot be substituted for one another because both the systems have their own benefits and limitations.
- These costing approaches are known by various names. For example, variable costing is also known as direct costing or marginal costing and absorption costing is also known as full costing or traditional costing.
- The information provided by variable costing method is mostly used by internal management for decision making purposes. Absorption costing provides information that is used by internal management as well as by external parties like creditors, government agencies and auditors etc.

Computation of unit product cost under two methods:

Under absorption costing system, the product cost consists of all variable as well as all fixed manufacturing costs i.e., direct materials, direct labor and factory overhead (FOH). But when variable costing system is used, the fixed cost (both manufacturing and non-manufacturing) is treated as a period or capacity cost and therefor is not included in the product cost.

Following exhibition summarizes the difference between variable costing and absorption costing:

Variable versus absorption costing

For further clarification of the concept, consider the examples given in Microsoft Excel Sheet 1:

❖ Profit Statements under Variable and Absorption Costing:

The net profit shown by Variable costing and absorption costing techniques may not be the same due to the different treatment of fixed manufacturing overheads. Variable costing technique treats fixed manufacturing overheads as period costs, where as in absorption costing technique these are absorbed into the cost of goods produced and are only charged against profit in the period in which those goods are sold. In absorption costing income statement, adjustment pertaining to under or over-absorption of overheads is also made to arrive at the profit.

Terms explained:

Product and Period Costs:

1 Product costs: the costs of manufacturing the products;

2 Period costs: these are the costs other than product costs that are charged to, debited to, or written off to the income statement each period.

A Case Example on Variable and Absorption Costing in Microsoft Excel Sheet 2:

❖ Which Companies using Absorption Costing and Variable Costing? Why?

Ford, General Motors, and Chrysler used "absorption costing" to make themselves look more profitable, researchers say. But the practice can be costly, and other companies may want to think twice before they follow suit.

Why the Big Three Put Too Many Cars on the Lot

- It's no secret that in the years leading up to 2008, the Big Three automakers — Ford, General Motors, and Chrysler — were producing above market demand. But researchers say they know why the automakers did it, and they are warning other companies to avoid the same temptation.
- To boost profits and keep up with short-term incentives, the automakers used an accounting trick, overproducing while "absorption costing," according to professors from Michigan State University who wrote a study on the topic that was recognized this January for its contribution to accounting by the American Institute of CPAs and other groups. Ultimately, the practice hurt the automakers, tacking on advertising and inventory holding costs and possibly causing a decline in brand image, the researchers say.
- From 2005 to 2006, long before GM and Chrysler filed for bankruptcy and appealed for federal aid, the automakers had abundant excess capacity. They could make more cars with their resources than consumers were willing to buy. They also had high fixed costs, including leases on factories and labor contracts that prevented them from laying off workers when demand was low, says Karen Sedatole, associate professor of accounting at MSU and a co-author of the study.
- To take advantage of these factors, the Big Three produced above market demand while using absorption costing — a technique that allows companies to calculate the cost of making a product by dividing total costs by the total number of products made, Sedatole says. Using this method, the cars the automakers made "absorbed" all manufacturing costs, including the cost of paying rent on idle factories.
- Because this method considers all fixed costs as part of the cost of goods sold, it gives companies an incentive to spread that cost among more products to make the cost-per-product appear lower. If this company has excess capacity, produces all the products it can, and sells up to demand, its cost of goods sold will be lower than it would if the company had only produced up to demand. This lower cost boosts profits on the income

statement. Instead of writing off the cost of these idle plants as an expense, companies shift it to the balance sheet as inventory.

- Say fixed costs for a given factory are $100, and that the factory can make 50 cars. Consumers, however, demand only 10. Under absorption costing, if the company makes all 50 cars, its cost-per-car is $2. If it makes only up to demand, or 10 cars, the cost-per-car is $10. Although each car adds variable costs for steel and other parts, if those costs are low, the company still has an incentive to make more cars to keep the cost-per-car down.
- If the company makes all 50 cars but can only sell 10, its cost of goods sold will appear on its income statement as 10 cars at $2 per car, or $20, plus variable costs. The cost of making the other cars will land on the balance sheet as ending inventory.
- If, on the other hand, the company makes just 10 cars, its whole overhead cost of $100 will fall on its income statement, raising its cost of goods sold and lowering profits. Companies that overproduce to avoid the latter scenario "are, in a way, managing earnings upward by trapping costs on the balance sheet as inventory, so they won't hit the income statement," Sedatole says.
- Absorption costing is legal. FASB Statement 151 allows companies to use the practice for "normal" excess capacity and to expense "abnormal" excess capacity. But it doesn't clearly define what's normal, leaving room for companies to overproduce in order to lower unit cost.
- But business leaders should think twice before letting this accounting method influence their production decisions, Sedatole says. Even though they can make their companies appear more profitable in the short term by concealing excess capacity costs on the balance sheet, holding so much excess inventory could be costly, she says.
- "When [the automakers] couldn't sell the cars, they would sit on the lot. They'd have to go in and replace the tires, and there were costs associated with that," Sedatole says. The companies also had to pay to advertise their cars, often at discounted prices. And by making their cars cheaper and more readily available, they may have turned off potential customers, she adds.
- "If you see a $12,000 car in a TV ad is being auctioned off for $6,000 at your local dealer, that affects your image of that vehicle," says Sedatole. This effect on brand image is difficult to quantify, but the researchers correlated 1% of rebate with a 2% decline in appeal in the J.D. Power Automotive Performance Execution and Layout (APEAL) Index.

- **The Central Lesson**

  Some might argue that it's good strategy for a company already obligated to pay rent and salaries on its factories to make products up to its capacity. "An economist would say as long as I could sell the car for more than its variable cost, I'm better off selling it," Sedatole says. But "that's a very, very short-term way of thinking," because it neglects the costs that come with having a high volume of excess inventory.
- The central lesson? Companies shouldn't use their financial-reporting methods to make internal decisions, says Ranjani Krishnan, MSU professor of accounting and a co-author of the study. "The objective of financial accounting is to provide information for

stakeholders that are external to the company," Krishnan says. "But that is not adequate from the perspective of internal decision-makers. Managerial accounting needs to focus on the best way to provide information that will lead to strategic economic decisions."

- Using absorption costing to monitor efficiency can lead companies to make poor production decisions, Krishnan says. A company that does this could seem to be growing less efficient when demand decreases. If a factory makes fewer cars this year than last year, for instance, its cost-per-car will look higher, and it may then overproduce in order to present itself more favorably to shareholders, consumers, and analysts.
- Instead, Krishnan suggests, companies should write off the cost of excess capacity as an expense on their internal income statements, a practice that may help give them perspective.
- Another way to avoid overproduction: companies can change the way they pay executives. Like many companies, the automakers put their managers under pressure to deliver in the short term by structuring executive-compensation incentives around metrics like labor hours-per-vehicle, which the auto industry's Harbour Report uses to compare companies. With fixed labor hours, the only way to look more efficient under this measure is to produce more cars.
- "A lot of this behavior was frankly driven by greed," Krishnan says. "If you look at the type of managerial incentives they had during the time of our study, the executive committee deliberations, it was all about meeting short-term quarterly traffic numbers or meeting analysts forecasts so that they could get their bonuses."
- Instead, companies "have to look at performance from a more holistic perspective, and not just look at financial numbers like net margin or profit, or return on investment, but also at things like customer satisfaction or brand image, things which may be a little bit more difficult to measure because they're not as quantifiable."
- Sedatole and Krishnan co-authored the study with Alexander Brüggen, an associate professor at Maastricht University in the Netherlands.