Al Farabi University

- Theme Other Costing Techniques. Joint-Product Costing
- Management Department
  - “Cost Management” Course
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JOINT-PRODUCT COSTING

- Joint products are produced simultaneously by a common process or series of processes, with each product possessing more than nominal value in its produced form.
- An increase in one product's output will increase the quantity of the other products, or vice versa, but not necessarily in the same proportion.
- Joint product costing constitutes the cost that arises from the common processing or manufacturing of products produced from a common raw material.
- The joint product cost results from the creation of two or more different products from a single cost factor.
- A joint cost is incurred before the point at which separately identifiable products emerge from the same process.
- The classic example of joint products is found in the meatpacking industry, where various cuts of meat and by-products are processed from one original carcass with one lump sum cost.

JOINT-PRODUCT COSTING

- Joint Product Costing is an example of Continuous Costing
- A joint cost is the cost of two or more products processed in one batch. Joint costs are incurred at the outset, even if each product possesses some value when it emerges from the process.
- Joint products need not possess the same value. If the total value of the joint product is significant, then additional analytical detail can improve decision making by management. For example, if two finished goods are produced from one process then the joint Cost Accounting method will provide more insight into factors that affect the profitability of the individual products than if all costs were considered to be product costs.

Joint Products

- Some products may be produced at the same time in the same process before being separated for sale or further individual processing. These products are known as joint products and the separation point is known as the split-off point.

For example, different types of carbonated drinks might use a common starting process where syrup, sweeteners and malt are added before they are split up and individual flavorings added

- Joint costs are the total of the raw material, labor, and overhead costs incurred up to the initial split-off point.

Joint Costs and Common Costs

- A joint cost is the cost of a process that results in more than one main product
- A common cost is a cost relating to more than one product or service.

The joint costs can not normally be directly attributable to individual joint products or by-products. Therefore, arbitrary allocations may have to be used
instead.

Joint Products and By-Products

- Joint Products are two or more products produced by the same process and separated in processing, each having a sufficiently high saleable value to merit recognition as a main product.

- A By-Product is output of some value produced incidentally in manufacturing something else (main product)

Methods of Joint Cost apportionment

There are many ways in which joint costs can be apportioned to products such as:

- Physical measurement
- Market value at point of separation
- Net realisable value/net relative sales value

In turn, the methods will result in different inventory valuations and, therefore, different recorded profits.

Example

An organisation produces two joint products Product A and Product B. The total joint costs are $750 and the following information is provided on each product:

	Kgs produced	Kgs sold	Selling price per kg	Joint Cost
Product A	100	80	$5	
				$750
Product B	200	150	$2	

Apportion the joint costs between the products using the following apportionment methods:

- physical measurement
- market value at point of separation
- net realisable value/net relative sales value

Solution-Apportionment by physical measurement

Particulars	Product A		Product B		Total
Sales	80 g $5.00	400	150 g $2.00	300	700
Cost of sales	80 g $2.50	(200)	150 g $2.50	(375)	(575)
Profit/(Loss)		200		(75)	125
Value of closing inventory	20 g $2.50	50	50 g $2.50	125	
Total share of joint costs (Cost of sales + inventory)		250			500

Particulars		Amount ($)
Sales value of product A	100 g $5	500
Sales value of product B	200 g $2	400
Joint Cost		(750)
Profit		150

Joint cost
Kgs produced = $750/300
= $2.50 per kg for A and B

Apportionment by market value at point of separation

Particulars	Sales value of production	Proportion	Joint cost apportionment	Per kg
A 100 g $5	500	5/9	417	4.17
B 200 g $2	400	4/9	333	1.67

Particulars	A	B	Total
Sales	400	300	700
Cost of sales	(333.6)	(250.5)	(584.1)
Profit	66.4	49.5	115.9
Profit/Sales	16.6%	16.5%	
Closing Inventory	83 (20x4.17)	83 (50x1.67)	

Apportionment by net realisable value

This approach should be used in situations where the sales value at the split-off point is not known

Further processing costs	Selling price after further processing
$280 + $2.00 per kg	$8.40
$160 + $1.40 per kg	$4.50

Apportionment of joint costs:	**Product A**	**Product B**
Final sales value of production (100 g $8.40; 200 g $4.50)	840	900
Further processing cost 280 + (100 g $2); 160 + (200 g $1.40)	480	440
	360	460

Apportionment by net realisable value

Particulars	Product A	Product B
Joint cost apportionment (360 : 460)	329	421
Joint cost per kg	$3.29	$2.10

Particulars	Amount $	Amount $
Sales		700
Joint Cost	750	
Less: Closing inventory A 20 g $3.29 =66 B 50 g $2.10 =105	(171)	(579)
Profit		121

Accounting for Joint Products

- Physical measurement of joint products: Joint costs can be apportioned to the units of output of each joint product. When the unit of measurement is different, e.g. liters and kilos, some method should be found of expressing them in a common unit. Some joint costs are not incurred equally for all joint products: such costs can be separated and apportioned by introducing weighting factors. Alternatively, a technical estimate of relative usage by each product may be made by the organisation.
- Market value: Joint costs can be apportioned on the basis of the market value of each joint product at the point of separation. The effect is to make each product appear to be equally profitable.
- Net realisable value: Where certain products are processed after the point of separation, further processing costs may be deducted from the market values before joint costs are apportioned.

Accounting for By-Products

Any of the following methods may be adopted:

- the proceeds from the sale of the by-product may be treated as pure profit, or
- the proceeds from the sale, less any handling and selling expenses, may be used to reduce the cost of the main products.

If a by-product needs further processing to improve its marketability, the cost will be deducted in arriving at net revenue

Joint costs in decision making

The main decisions involving joint products are:

- To carry out the whole process or not. This decision is made by considering the total revenues and costs of the process. A decision cannot be taken to just process some of the products as all products are produced simultaneously. The basis of common cost apportionment is irrelevant but the common costs in total are relevant. E.g.: Milk and milk products
- Whether or not to further process products. This decision is based on the incremental costs and incremental revenues of further processing. Revenue and cost at the split-off point are irrelevant to the decision as they will not change. E.g.: Leather in Jackets and belts