

# Responsibility Center & Transfer Pricing

**Chartered Accountancy  
Corporate Level  
Advanced Management Accounting (AMA)**

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# Responsibility Center & Transfer Pricing

## Responsibility Center

- ▶ **Responsibility centers** - Discuss decentralization and different types of responsibility centers (revenue, cost, profit and investment centers).
- ▶ **Responsibility center accounting** - Discuss different types of transfer pricing possible under decentralized organizational structure (including maximum and minimum price, cost based pricing, market based pricing, dual pricing and negotiated pricing).
- ▶ **Responsibility centers performance measurement-** Assess divisional performance using Return on Investment (ROI), Residual Income (RI) and Economic Value Added (EVA).

# Responsibility Center Accounting

- ▶ **Responsibility accounting** is the term used to describe decentralization of authority, with the performance of the decentralized units measured in terms of accounting results.
- ▶ With a system of responsibility accounting there are three types of **responsibility Centre: cost Centre, profit Centre and investment Centre.**

Type of responsibility centre	Manager has control over ...	Principal performance measures
<b>Cost centre</b>	Controllable costs	Variance analysis Efficiency measures
<b>Revenue centre</b>	Revenues only	Revenues
<b>Profit centre</b>	Controllable costs Sales prices (including transfer prices)	Profit
<b>Investment centre</b>	Controllable costs Sales prices (including transfer prices) Output volumes Investment in non-current assets and working capital	Return on investment Residual income Other financial ratios

## Advantages of Divisionalization

- ▶ Divisionalisation can **improve the quality of decisions** made because divisional managers (those taking the decisions) know local conditions and are able to make more informed judgments
- ▶ **Decisions should be taken more quickly** because information does not have to pass along the chain of command to and from top management.
- ▶ The authority to act to improve performance should **motivate divisional managers.**
- ▶ Divisional organization **frees top management** from detailed involvement in day-to-day operations and allows them to devote more time to strategic planning.
- ▶ Divisions provide **valuable training grounds for future members of top management** by giving them experience of managerial skills in a less complex environment than that faced by top management.
- ▶ In a large business organisation, the central head office will not have the management resources or skills to direct operations closely enough itself. Some authority must be delegated to local operational managers.

## Disadvantages of Divisionalisation

- ▶ A danger with divisional accounting is that the business organization will divide into a number of self-interested segments, each acting at times against the wishes and interests of other segments.
- ▶ It is claimed that the **costs of activities that are common** to all divisions, such as running the accounting department, **may be greater** for a divisionalised structure than for a centralized structure.
- ▶ **Top management**, by delegating decision making to divisional managers, may **lose control** since they are not aware of what is going on in the organization as a whole. (With a good system of performance evaluation and appropriate control information, however, top management should be able to control operations just as effectively.)

## Transfer Pricing

- ▶ Transfer prices are a way of promoting **divisional autonomy**, ideally without prejudicing the **measurement of divisional performance** or discouraging **overall corporate profit maximization**.
- ▶ Transfer prices should be set at a level which ensures that **profits for the organization as a whole** are **maximized**.
- ▶ The **limits within which transfer prices should fall** are as follows.
  - **The minimum.** The sum of the supplying division's marginal cost and opportunity cost of the item transferred.
  - **The maximum.** The lowest market price at which the receiving division could purchase the goods or services externally, less any internal cost savings in packaging and delivery.

# Transfer Pricing

- ✓ If **variable costs and market prices are constant**, regardless of the volume of output, a **market-based transfer price** is the ideal transfer price.
- ✓ If a **perfect external market** exists, **market price** is the **ideal** transfer price.
- ✓ If transfer prices are set at variable cost with an imperfect external market, the supplying division does not cover its fixed costs. **Dual pricing** or a **two-part tariff system** can be used in an attempt to overcome this problem.
- ✓ If **transfers** are made at actual cost instead of **standard cost**, there is no incentive for the supplying division to control costs as they can all be passed on to the receiving division.
- ✓ If divisional managers are allowed to **negotiate transfer prices** with each other, the agreed price may be finalized from a mixture of **accounting arithmetic, negotiation and compromise**.

# Opportunity Cost

- ▶ The **opportunity cost** included in determining the lower limit will be one of the following.
  - (a) The maximum contribution forgone by the supplying division **in transferring internally rather than selling goods externally**
  - (b) The contribution forgone by not using the same facilities in the producing division for their next best alternative use
- ▶ If there is **no external market** for the item being transferred, and **no alternative uses** for the division's facilities, the  
**transfer price = standard variable cost of production.**
- ▶ If there is an external market for the item being transferred and no alternative, more profitable use for the facilities in that division, the  
**transfer price = the market price.**

## Minimum and maximum transfer prices

- ▶ The limits within which transfer prices should fall are as follows.
  - ▶  The minimum. The sum of the supplying division's marginal cost and opportunity cost of the item transferred.
  - ▶  The maximum. The lowest market price at which the receiving division could purchase the goods or services externally, less any internal cost savings in packaging and delivery.
- ▶ The minimum results from the fact that the supplying division will not agree to transfer if the transfer price is less than the marginal cost + opportunity cost of the item transferred (because if it were the division would incur a loss).
- ▶ The maximum results from the fact that the receiving division will buy the item at the cheapest price possible.

## Transfer Price - Market Price

- ▶ If an external market exists for the product being transferred (and there is unsatisfied demand externally) the ideal transfer price will be the market price.
- ▶ If **variable costs and market prices are constant**, regardless of the volume of output, a **market-based transfer price** is the ideal transfer price.
- ▶ If a **perfect external market** exists, **market price** is the **ideal** transfer price.
- ▶ If an **external market price exists** for transferred goods, profit centre managers will be aware of the price they could obtain or the price they would have to pay for their goods on the external market, and they would inevitably **compare** this price **with the transfer price**.
- ▶ The external market is also sometimes known as the **intermediate market**.

## Transfer Price - Adjusted Market Price

- ▶ **Internal transfers** are often **cheaper** than external sales, with **savings** in selling and administration costs, bad debt risks and, possibly, transport/delivery costs. It would therefore seem reasonable for the **buying division to expect a discount** on the external market price.
- ▶ The transfer price might be slightly less than market price, so that **A and B could share the cost savings** from internal transfers compared with external sales. It should be possible to reach agreement on this price and on output levels with a minimum of intervention from head office.

## The merits of market value transfer prices

- ▶ **Divisional autonomy**

In a decentralized company, divisional managers should have the **autonomy** to make output, selling and buying **decisions which appear to be in the best interests of the division's performance**. (If every division optimizes its performance, the company as a whole must inevitably achieve optimal results.)

- ▶ **Corporate profit maximization**

In most cases where the transfer price is at market price, **internal transfers** should be **expected**, because the **buying division** is likely to **benefit** from a better quality of service, greater flexibility and dependability of supply.

- ▶ **Acceptance by tax authorities**

## Main uses of transfer prices

- ✓ **Evaluation of divisional managers' performance**
- ▶ Transfer prices will be a **cost** for the **division receiving the goods** and a **revenue** for the division **supplying the goods**. Just as managers are assessed on their management of costs from external suppliers, they are also assessed on their **ability to control internal costs**. This can lead to disputes between divisional managers as they try to protect their own interests and achieve optimal performance of their own divisions.
- ✓ **Achieve the overall organizational goals**
- ▶ Also known as **goal congruence**, transfer prices in theory should be set to ensure that **organizational goals** (such as profit maximization) **are achieved**. Although divisional managers are being assessed on their own divisions' performance, their overall objective should be to ensure that their behavior supports the achievement of organizational goals. Transfer prices should be set at a level that **encourages 'trade'** between divisions rather than driving divisional managers to purchase the goods from external suppliers.
- ✓ **Preserve divisional autonomy**
- ▶ Divisional autonomy refers to the right of a division to govern itself, that is, the **freedom to make decisions without consulting a higher authority first and without interference from a higher body**.
- ▶ Transfer prices are particularly appropriate for **profit centres** because if one profit centre does work for another the size of the transfer price will affect the costs of one profit centre and the revenues of another.

## The disadvantages of market value transfer prices

- ▶ Market value as a transfer price does have certain disadvantages.
- (a) The market price may be a temporary one, induced by adverse economic conditions, or dumping, or the market price might depend on the volume of output supplied to the external market by the profit centre.
- ▶ (b) A transfer price at market value might, under some circumstances, act as a disincentive to use up any spare capacity in the divisions. A price based on incremental cost, in contrast, might provide an incentive to use up the spare resources in order to provide a marginal contribution to profit.
- ▶ (c) Many products do not have an equivalent market price so that the price of a similar, but not identical, product might have to be chosen. In such circumstances, the option to sell or buy on the open market does not really exist.
- ▶ (d) There might be an imperfect external market for the transferred item, so that if the transferring division tried to sell more externally, it would have to reduce its selling price.

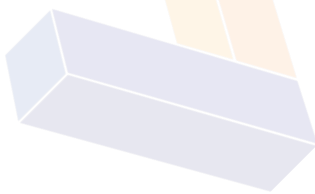


## Transfer Price - Full Cost Price

- ▶ Under this approach, unsurprisingly, the **full cost** (including fixed production overheads absorbed) that has been incurred by the supplying division in making the intermediate product is charged to the receiving division.
- ▶ If a **full cost-plus approach** is used a **profit margin is also included** in this transfer price.

## Transfer Price - Variable / Marginal Cost Price

- ▶ A variable or marginal cost approach entails charging the variable cost (which we assume to be the same as the marginal cost) that has been incurred by the supplying division to the receiving Division.



## Transfer Price - Dual Price

- ▶ One of the problems with a variable cost approach to transfer pricing is that the selling division will not cover its fixed costs.
- ▶ **Dual pricing**, as the name suggests, results in **different prices** being used by the selling and buying divisions. The selling division will use a price that will allow it to report a **reasonable profit** (usually the external market price if there is one).
- ▶ The buying division will be charged with the **variable cost**. The difference between the two prices will be debited to a group account which will then be cancelled out when divisional results are consolidated to arrive at the group profit.

## Transfer Price - Dual Price

However, despite its advantages, dual pricing is not widely used in practice for the following reasons.

- a) Head office will need to be notified of each transaction to ensure that it is accounted for correctly. This is likely to take a considerable amount of time and may require a separate accounting function to be set up.
- b) Dual pricing is a complicated system to operate when many goods are being transferred between a number of different divisions.
- c) By continually reporting transactions to head office, managers of divisions may feel that they are not being given the freedom to run their division as they see fit.
- d) If total cost-plus pricing is used due to market prices collapsing, it could be argued that managers of the supplying division are being 'protected' from tough market conditions.

## The optimal transfer price

- a) The **ideal transfer price** should **reflect the opportunity cost** of sale to the supply division and the opportunity cost to the buying division. Unfortunately, full information about opportunity costs may not be easily obtainable in practice.
- b) Where a **perfect external market price** exists and **unit variable costs and unit selling prices are constant**, the **opportunity cost** of transfer will be **external market price** or **external market price less savings in selling costs**.
- c) In the **absence of a perfect external market price for the transferred item**, but when **unit variable costs are constant**, and the **sales price per unit of the end product is constant**, the **ideal transfer price** should reflect the opportunity cost of the resources consumed by the supply division to make and supply the item and so should be at standard **variable cost + opportunity cost of making the transfer**.
- d) When **unit variable costs and/or unit selling prices are not constant**, there will be a **profit-maximising level of output** and the **ideal transfer price** will only be found by sensible **negotiation** and careful **analysis**.
  - ▶ (i) Establish the output and sales quantities that will optimise the profits of the company or group as a whole.
  - ▶ (ii) Establish the transfer price at which both profit centres would maximise their profits at this company-optimising output level.

## Main uses of transfer prices

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## Problems with transfer pricing

- Maintaining the right level of divisional autonomy
- Ensuring divisional performance is measured fairly
- Ensuring corporate goals are met
- ▶ The ideal solution.....
- ▶ Ideally, a transfer price should be set at a level that overcomes these problems.
- ▶ a) The transfer price should provide an 'artificial' selling price that enables the **transferring division to earn a return for its efforts**, and the receiving division to incur a cost for benefits received.
- ▶ (b) The transfer price should be set at a level that enables profit centre performance to be measured 'commercially'. This means that the transfer price should be a fair commercial price.
- ▶ (c) The transfer price, if possible, should encourage profit centre managers to agree on the amount of goods and services to be transferred, which will also be at a level that is consistent with the aims of the organisation as a whole, such as **maximising company profits**.



## Assessing divisional performance

## Assessing divisional performance

- ▶ The performance of an investment centre is usually monitored using either or both of **return on investment (ROI)** (also known as return on capital employed (ROCE)) and **residual income (RI)**.
- ▶ Economic value added (EVA®) is an alternative absolute performance measure. It is similar to RI and is calculated as follows.
- ▶  $EVA = \text{net operating profit after tax (NOPAT)} - \text{capital charge}$
- ▶ where the capital charge = weighted average cost of capital x net assets
- ▶ EVA and RI are similar because both result in an absolute figure which is calculated by subtracting an imputed interest charge from the profit earned by the investment centre. However, there are differences as follows.

## Economic Value Addition (EVA)

- ▶ The most common objective in decision making scenarios is to maximize shareholder value. This is because most decisions are made by companies where the directors have a duty to act in the interests of their shareholders.
- ▶ Research has found that to develop decision making metrics that maximize shareholder value, the following factors need to be incorporated:
  - a. **Cash is preferable to profit** - Cash flows have a higher correlation with shareholder wealth than profits.
  - b. **Exceeding the cost of capital** - The return, however measured, must be sufficient to cover not just the cost of debt (for example by exceeding interest payments), but also the cost of equity.
  - c. **Managing both long and short-term perspectives** - Investors are increasingly looking at long-term value. When valuing a company's shares, the stock market places a value on the company's future potential, not just its current profit levels.
- ▶ EVA is an attempt to address the above three issues.

## How to Calculate EVA?

Net operating profit after tax (NOPAT)	X
Less economic value of capital employed × WACC	(X)
EVA	<u>X</u>
Controllable PAT	X
<b>Add back non-cash items such as:</b>	
accounting depreciation	X
non-cash expenses	X
interest paid net of tax	X
<b>Add back items that add value such as:</b>	
goodwill amortisation	X
development and advertising costs	X
operating lease interest cost	X
<b>Deduct:</b>	
economic depreciation	(X)
impairment to the value of goodwill	(X)
amortisation of development and advertising costs	(X)
<b>= NOPAT</b>	<b>X</b>

## Advantages of EVA

The advantages of EVA include the following.

- Maximisation of EVA will create real wealth for the shareholders.
- The adjustments within the calculation of EVA mean that the measure is based on figures that are closer to cash flows than accounting profits. Hence EVA® may be less distorted by the accounting policies selected.
- The EVA measure is an absolute value which is easily understood by nonfinancial managers.
- If management are assessed using performance measures based on traditional accounting policies they may be unwilling to invest in areas such as advertising and development for the future because such costs will immediately reduce the current year's accounting profit. EVA recognises such costs as investments for the future and thus they do not immediately reduce the EVA in the year of expenditure.

## Disadvantages of EVA

EVA® does have some drawbacks.

- a) It is still a relatively short-term measure which can encourage managers to focus on short-term performance.
- b) EVA® is based on historical accounts which may be of limited use as a guide to the future. Also, in practice, the influences of accounting policies on the starting profit figure may not be completely negated by the adjustments made to it in the EVA® model.
- c) Making the necessary adjustments can be problematic as sometimes a large number of adjustments are required.
- d) Investment centres which are larger in size may have larger EVA® figures for this reason. Allowance for relative size must be made when comparing the relative performance of investment centres.

## Residual income

- ▶ An alternative way of measuring the performance of an investment centre, instead of using ROI, is residual income (RI). **Residual income** is a **measure of the centre's profits after deducting a notional or imputed interest cost**.
- ▶ (a) The centre's profit is **after deducting depreciation** on capital equipment.
- ▶ (b) The imputed cost of capital might be the organisation's cost of borrowing or its weighted average cost of capital.
- ▶ **Residual income** is 'Profit minus a charge for capital employed in the period'.