Chapter 11

TRANSFER PRICING AND RESPONSIBILITY ACCOUNTING

Example 01

A company has two profit centres, A and B. Center A sells half of its output on the open market and transfer the other half to B. Costs and external revenues in an accounting periods are as follows;

	A	B	Total
	Rs.	Rs.	Rs.
External sales	8,000	24,000	32,000
Cost of production	12,000	10,000	22,000
Company profit			10,000

What are the consequences of setting the transfer price at market price?

Example 02

A company has two profit centres, A and B. Center A can only sells half of its maximum output externally because of the limited demand. It transfers the other half of its output to B which also faces limited demand. Costs and external revenues in an accounting periods are as follows;

	A	B	Total
	Rs.	Rs.	Rs.
External sales	8,000	24,000	32,000
Cost of production	12,000	10,000	22,000
Company profit			10,000

There are no opening and closing stocks.

What are the consequences of setting the transfer price at full cost plus mark up of 25%?

Example 03

A company has two profit centres, A and B. Center A can only sells half of its maximum output externally because of the limited demand. It transfers the other half of its output to B which also faces limited demand.

The production cost of A and B are Rs.12,000 and Rs.10,000 respectively. The cost per unit of A's output is R.9 in variable and Rs.6 in fixed costs. B's own costs are Rs.25 including a fixed element of Rs.10. A transfer the products to B at its production cost.

What is the minimum price that B should charge for its products to break even?

Example 04

A company has two profit centres, A and B. Center A can only sells half of its maximum output externally because of the limited demand. It transfers the other half of its output to B which also faces limited demand. A's cost per unit is Rs.15, of which Rs.6 is fixed and Rs.9 variable. B's cost per unit is Rs.25, of which Rs.10 is fixed and Rs.15 variable. Costs and external revenues in an accounting periods are as follows;

	A	B	Total
	Rs.	Rs.	Rs.
External sales	8,000	24,000	32,000
Cost of production	12,000	10,000	22,000
Company profit			10,000

There are no opening and closing stocks.

What are the consequences of setting the transfer price at marginal cost?

Example 05

Division A is a profit center that produces 3 items, X,Y and Z. Each item has an external market.

	X	**Y**	**Z**
External market price, per unit	Rs.48	Rs.46	Rs.40
Variable cost of production in division A	Rs.33	Rs.24	Rs.28
Labour hours required per unit in division A	3	4	2

Product Y can be transferred to division B, but the maximum quantity that might be required for transfer is 300 units of Y.

Maximum external sales are 800 units of X, 500 units of Y and 300 units of Z.

Instead of receiving transfer of products Y from division A, division B could buy similar unit of product Y on the open market at a slightly cheaper price of Rs45 per unit.

What should be transfer price be for each unit if the total labour hours available in division A are 3,800 hours or 5,600 hours.

Example 06

The transfer pricing system operated by a divisional company has the potential to make a significant contribution towards the achievement of corporate financial objectives.

Required
Explain the potential benefits of operating a transfer pricing system within a divisionalised company.

Example 07

An investment division currently has net assets of Rs.500,000 and is earning profits of Rs.70,000 per annum. The divisional manager is considering a new investment which will cost Rs.20,000 and will generate additional profits of Rs.2,200 per annum. The company has a cost of finance of 10%.

What is the RI for the division with and without the new investment?’

Example 08

A division has reported a PBIT of Rs.42million. This is after charging Rs.8million for the development and launch costs of a new product that is expected to have a life of four years.

The division's non-current asset value is Rs.100million and the net current assets have a value of Rs.44million. The replacement cost of the non-current assets is estimated to be Rs.128million.

The company's WACC is 12% and the taxation rate is 25%.

Required: Calculate the division's EVA.

Question 01

Moon (Pvt) Ltd (Moon) manufactures Product X and sells to external customers at Rs. 5,000 per unit. Moon also supplies Product X to one of its subsidiaries Star (Pvt) Ltd (Star) also at the same price of Rs. 5,000 per unit.

The price is based on cost plus 25% profit mark up. Of the total cost 75% is estimated as variable and the balance 25% as fixed.

The external sales of Product X involve a variable packaging cost of Rs. 500 per unit which could be avoided when supplied to Star.

When determining intra-group transfer prices, maximization of group profit is always considered as the primary criterion.

The external market for Product X is volatile and Moon has the following scenarios for the first three months of the next quarter.

(a) January

The marketing manager has stated that the transfer prices should be based on marginal cost, whereas the finance manager has commented that in certain circumstances, opportunity cost based methods also would be relevant.

Moon will have external demand for all of its production of Product X, at a selling price of Rs. 5,000 per unit.

(b) February

Moon will have a capacity of 4,000 units of Product X of which there will be an external market available only for 1,000 units.

(c) March

Moon will have a capacity of 3,000 units of Product X for which there will not be an external market available. However 2/3 of this capacity could be used for alternative use, which is estimated to generate a contribution of Rs. 2,000,000.

Required:

Discuss, in the above context with supporting calculations, wherever appropriate how the transfer prices should be set, in each of the three months, as per the given circumstances.

(Total: 10 marks)

Question 02

Sparkling Automobiles provides vehicle maintenance services through its chain of automobile centers. Each automobile center operates as an investment center.

Automobile center managers are targeted on Return on Capital Employed (ROCE) and receive a bonus if their automobile center generates an annual ROCE of 15% or more.

At the start of the current year, managers were informed that each automobile center would now receive an apportionment of the head office fixed overhead costs calculated at 7% of the sales revenue. The head office stated that the target ROCE would remain at 15% for each of its automobile centers.

The following is a summary performance report for Automobile centers A and B.

	Automobile Center A		**Automobile Center B**	
	Current year Rs.000	**Last year Rs.000**	**Current year Rs.000**	**Last year Rs.000**
Sales	1,300.00	1,200.00	550.00	500.00
Material cost	190.00	180.00	80.00	75.00
Staff cost	355.00	350.00	150.00	150.00
Head office fixed OH apportionment cost	91.00	-	38.50	-
Other operating cost	440.00	460.00	220.00	180.00
Profit	224.00	210.00	61.50	95.00
capital employed	1,600.00	1,500.00	400.00	600.00

Sparkling Automobiles has a cost of capital of 8%.

Required:

(a) **State** one (01) advantage and one (01) disadvantage of the automobile centers being charged an apportionment of head office fixed overhead costs. (2 marks)

(b) **Calculate**, the ROCE for each automobile center for each year:
  (i) Before apportionment of head office fixed overhead costs
  (ii) After apportionment of head office fixed overhead costs

(Apportionment of head office fixed overhead costs for the last year to be made on the same basis as the current year for comparison purposes) (2 marks)

(c) **Discuss** the performance of each automobile center and **state** the factors to be considered in using ROCE to evaluate managers' performance. (4 marks)

(d) **Discuss** one (01) advantage and one (01) disadvantage of using residual income (RI) instead of ROCE to determine manager bonuses. (2 marks) **(Total: 10 marks)**

Question 03

The fragrance division of a beauty care production company is planning to introduce a new product. The divisional manager is in the process of evaluating two options to buy a production plant. Both options will have the same capacity and expected life of four years but they will differ in capital costs and expected net cash flows as shown in the table below.

	Option 1 Rs.Mn	Option 2 Rs.Mn
Initial capital investment Year 0	**640**	**520**
Net Cash Flows (before tax)		
Year 1	240.00	260.00
Year 2	240.00	220.00
Year 3	240.00	150.00
Year 4	240.00	100.00
Net Present Value (NPV) @ 16% p.a	**31.60**	**19.00**

All divisions of the company are expected to generate pre-tax returns on divisional investments in excess of 16% per annum, which the fragrance division currently is just managing to achieve. Anything less than 16% would make the divisional managers ineligible for the annual performance bonus.

The performance bonus is linked to Return on Investment (ROI) and Residual Income (RI) and also has an impact on the calculation of retirement benefits, as the retirement benefits take into consideration the performance bonus earned during the two preceding years. The manager of the fragrance division is due to retire at the beginning of Year 3.

In calculating divisional returns, divisional assets are valued at the net book values at the beginning of the year. Depreciation is charged on a straight line basis.

Required:

(a) **Calculate** the ROI and RI for Years 1 to 4 and select the best option from the point of view of the fragrance division based on ROI and RI criteria.(7 marks)

(b) **Explain** why neither ROI nor RI would motivate the fragrance division manager to invest in the option showing the higher NPV. (3 marks) **(Total: 10 marks)**

Question 04

Electronics (Pvt) Ltd (EL) has been assembling computers under the brand name EXCEL in its Computer Assembly (CA) division. EL has recently commenced an Electronic Engineering (EE) division that makes a computer accessory Y for the local market.

The budgets prepared for each division for the next quarter are given below for discussion and approval by the management.

	CA Rs.Mn	EE Rs.Mn
Sales		
2,000 units of EXCEL at Rs.75,000 each	150.00	-
8,000 units of Y at Rs.12,500 each	-	100.00
Variable cost	(100.00)	(60.00)
Contribution	50.00	40.00
Fixed cost	(30.00)	(20.00)
Profit	**20.00**	**20.00**

The manager of the CA division believes that he could increase the budgeted sales of EXCEL by an additional 500 units if he could reduce the budgeted selling price by Rs. 2,500 (i.e. the price reduction will apply to all units sold). One processor of type X is used to assemble a single EXCEL computer. Currently the EE division does not produce the type of processor X needed by the CA division. At present these processors are bought from an outside supplier at Rs. 25,000 each.

The management of EL has proposed that the EE division makes and supplies the processors X for the CA division at a price of Rs. 22,500 each, which will be its variable cost. However, every processor X made at the EE division for the CA division would result in loss of one unit of production/sale of the accessory Y due to capacity constraints.

Required:

(a) The management of EL would like to evaluate the two proposals together as one proposal (i.e. price reduction of EXCEL and manufacturing of processors X for CA by EE).

Discuss whether you would support the proposal of the management of EL from the viewpoint of (i) the CA division, (ii) the EE division and (iii) company EL, with relevant calculations. (7 marks)

(b) The manager of EE division is of the view that CA division purchasing the processor X from an outside supplier at Rs. 25,000 each is more beneficial to the company EL.

Discuss with appropriate calculations the best course of action from EL's point of view if the company is keen in increasing sales by an additional 500 units. (3 marks) **(Total: 10 marks)**

Question 05

Komma (Pvt) Ltd (KPL) is a well-established stationery manufacturing company enjoying a major market share for a number of its stationery products. However, the oil gel pen (OGP) that they had developed one year ago is not performing as expected in the market, despite its high quality, due to many existing suppliers with similar products. The following is a summary of last month's results from the production and sale of 1 million pens.

Description	**Rs.000**
Sales (Rs.25 each)	**25,000.00**
Cost of sales	
Plastic material	(10,000.00)
Imported barrel	(2,000.00)
Oil gel	(500.00)
Labour	(1,500.00)
Other variable cost	(2,500.00)
Fixed overhead	(6,000.00)
Gross Profit	**2,500.00**

KPL currently determines the selling price by adding a profit mark-up to the full cost.

KPL is planning to expand its market share and is looking for avenues that will improve the profitability of OGP at the same time. One of the strategies the management is considering is the adoption of the market skimming pricing method.

The following information was derived from market research conducted in determining the selling price of OGP.

For every 50 cents' increase in the selling price of a pen, demand would reduce by 100,000 pens. For every 50 cents' decrease in the selling price of a pen, demand would increase by 100,000 pens.
You are the assistant accountant of KPL.

Required:

(a) If KPL decides to set the unit price so as to maximise profit, **assess** the:
- optimal price per pen
- profit for the next month (7 marks)

(b) **Discuss** the appropriateness of the market skimming pricing strategy as an alternative pricing strategy for OGP. (3 marks) **(Total: 10 marks)**

Question 06

The CEO of Better Managed (Pvt) Ltd (BML) recently followed an executive management programme offered by CA Sri Lanka. He has found the following extract from his notes.

"Management accounting control systems have two core elements. One is the formal planning process that includes strategic planning and budgeting. The other is responsibility accounting, which involves the creation of responsibility centers. Responsibility centers enable accountability for financial results to be assigned to individuals throughout the organization.

However when setting up responsibility centers attention should be given to the 'controllability principle', which is critical in establishing a successful performance evaluation system based on responsibility centers."

The CEO has requested his newly recruited senior business accountant to provide more elaborative information in this regard.

Required:

(a) **Explain** the four (04) different types of responsibility centers. (6 marks)

(b) **Explain** the controllability principle and how that principle should be addressed in setting up responsibility centers. (4 marks) **(Total: 10 marks)**

Question 07

Techno (Pvt) Ltd (TPL) is a computer assembling company that is part of DPP group. Many of the required computer parts are bought from outside suppliers. However, the computer motherboard is supplied by Qtech (Pvt) Ltd, a sister company of the group.

The current transfer price of motherboards that Qtech charges from TPL are set by the group head office, by adding a 30% profit mark-up to the total variable cost relating to production and delivery. The managing director of Qtech argues that the fixed cost should also be taken into consideration when setting the transfer price. He further stated that he is willing to reduce the mark-up to 10% in this case. TPL is also unhappy with the current pricing policy since the price of motherboards of the same quality in the external market is Rs. 11,500 each. The present requirement of TPL is 20,000 motherboards per month.

The cost per motherboard is as follows.

	Rs.
Raw material	7,000.00
Direct labour charges	1,500.00
Variable production overhead	500.00

Fixed overheads are charged at 20% of total variable production cost per unit.

Qtech presently serves both external market and demand of TPL. Deliveries to both markets are made by an outsourced distributor who charges Qtech Rs. 200 per motherboard. Qtech expects that the external market demand for motherboards could not be increased in the short-run.

You are a management accountant working at the head office of DPP group.

Required:

(a) **Calculate** the prices at which Qtech sells motherboards to TPL under the existing pricing policy and when it applies the full cost plus 10% profit mark-up as proposed by the managing director of Qtech. (3 marks)

(b) **Assess** the possible change in TPL's profit and the maximum loss to DPP group if TPL is independent in making purchasing decisions. (4 marks)

(c) **Explain** the dual rate transfer pricing policy and whether it is applicable in the above scenario. (3 marks) **(Total: 10 marks)**