The price elasticity of moisturizing cream

Considering the above table, we find that the quantity demanded has increased from P0 to P4. But we do not see a significant decrease in the price of the product. Does that mean that moisturizing cream is price inelastic? The answer to the question is NO. Moisturizing cream is definitely price elastic. But price is not the only factor that affects the demand of the cream. The other major factor that affects the quantity demanded is Advertising cost.

Moisturizing cream can be considered as a non essential luxury durable good. According to Sethuram and Tellis (in Farnham 2010, p 96), durable goods have lower price elasticity than non-durable goods. Usually consumers relate a higher price of durable good with a high quality. Hence they can pay higher price for a product. The non durable goods are more price elastic since consumers are not ready to pay more price for an item that will not last for a long time.

According to the marketing study of Sethuraman and Tellis (in Farnham 2010 ; p 97) producers should concentrate their strategies on advertising policies for cosmetics, luxury goods and new products. Higher advertising cost will help in creation of brand value and increase the sales of the product. Higher advertising will project the superiority of the brand with respect to the other brands (if done correctly).

As seen from the table, the demand curve drawn would have positive slope. A demand curve with positive slope is common in markets that exhibit Conspicuous Consumption and the products that are categorized as Veblen goods.

In the game, the highest market shares were experienced by firms that had the highest advertising costs.

Considering the performance of the best 2 firms on the basis of profit and market share for five periods of GRITAIN MOISTURIZING CREAM INDUSTRY:

It can be clearly seen that the market share is influenced by the advertising cost. In P1, firm 38 had a market share of 32. 8% though its price was much higher than firm 35. This shows that when the advertising is higher, the quantity demanded for products like moisturizing cream and other beauty products is higher, irrespective of the country. Let us analyse the elasticity of Cement by considering the PIELAND CEMENT INDUSTRY. Again considering the performance of the best 2 firms in the first five periods on the basis of market share and profit we have:

On considering P2, it can be found out that the market share of firm 7 is much higher than its closest competitor firm 9 in spite of the fact that firm 9 spent heavily on advertising. This shows that consumers demand more units of cement if it is cheaper, making it highly price sensitive. It has a low price elasticity of demand. It was observed that making profit was highly difficult in the cement industry. A right mix of advertising and pricing strategy was required. A very low price would help in achieving a good market share but would make it very difficult to break even.

According to Dr. Divina M. Edralin (2004) ‘ The cement industry is highly capital-intensive, as it needs substantial investments in fixed assets like plant and equipment. The industry’s main product is characterized by low price elasticity of demand, limited shelf life, and expensive handling and

transportation costs for imports.’ According to Dr Edralin, globalization has provided opportunities to transnational cement corporations to monopolize the world’s cement industry by managing the economies of scale because of their large capital investments and thus making it difficult for smaller domestic firms/factories producing cement.

PART B: PRODUCTION AND COST ANALYSIS (SHORT RUN AND LONG RUN)

SHORT RUN

Considering the firm 28 in Pieland Moisturizing Cream Industry, the short run cost functions can be interpreted by looking at the total fixed and variable cost, average fixed and variable cost.

The functioning of the firms of various industries from P0 to P4 can be considered as short run as the firms were not allowed to increase their capacity. Thus the capital input remains constant in those periods.

Fixed Costs = Overhead costs + Interest on negative balance + advertising costs + depreciation (These costs are not related to the production). As advertising costs have increased because of managerial decisions, they can be categorized as discretionary-fixed costs. Depreciation is considered as a fixed cost because it is calculated on the basis of time and not on the basis of number of units that a machine produces.

Variable costs = $2 per pot of moisturizing cream

Depreciation is 5% per period

Profit calculation was done as total revenue – total costs

If we combine the above two periods for firm 28, we have

Total Revenue = 183200(period 1) + 252000(period 2) = $435200

Total Costs = 159800(period 1) + 191698(period 2) = $351498

Total Profit = $83702

Total sales = 46900 pots

Profit per pot (combined P1 and P2)= $1. 78

Profit for P1= 23400 (183200-159800) => Profit per pot = 23400/22900 = $1. 02

Profit for P2= 60302 (252000-191698) => Profit per pot = 60302/24000 = $2. 51

As we can see, the profit has increased in the period 2. In real life situations where most of the durable products are quite price elastic, the managers have constraints of not increasing the product price (unlike the game). The costs of running the firm increases gradually as more competitors enter the industry and companies spend more on advertising costs. This costs the profits to reduce after some time and the firms are forced to innovate new products and strategies.

This can be overcome by the economies of scale as well as by increasing the price per unit. In a luxury non-essential item such as moisturizing cream, it can be done by increasing the price per unit as moisturizing cream is more advertisement elastic and consumers are ready to pay a higher price. This

can be seen in the prices of the best performing teams of Pieland moisturizing cream industry.

Just 5 periods have been shown as the firms had the provision to increase their capacity from P5.

If we consider the Pieland Cement Industry and analyse the pricing strategy of the best two firms we can interpret that to survive in the industry, it is very essential to keep the price low as cement is not very advertisement elastic and highly price elastic.

This makes cement industry in any country highly vulnerable to competition. Hence the cement firms have to work in collusion to survive in the market. The cartelisation mode of functioning is very common in this industry. The case of collusion is not seen in the game as two out of four firms have made huge losses.

LONG RUN

According to Farnham (2010: 167) moisturizing cream industry in the game has adopted the capital intensive method of production because there is a provision of buying large large quantities of capital investment.

Considering the firms of Pieland Moisturizing Cream, a comparison can be done between capacities of two firms: one which did not increase the capacity and the other which increased the capacity.

The cost per unit for each of the above periods for the firms would be:

The cost per unit is calculated as (Overhead+Variable costs)/ Units produced for simplicity.

The cost due to negative interest and the advertising cost have not been considered for the calculation. Above it can be seen that the cost per unit in P1 for firm 25 is more than firm 28. This is because the capacity utilization of firm 25 is lesser than firm 28. Firm 25 produced 12000 units in P1 whereas firm 28 produced 18000 units in P1.

As it can be seen in Table B. 7, the cost per unit for firm 28 has reduced consistently from P1 to P7. It is easier for firm 28 to breakeven quickly and sell the units at reduced prices and drive firm 25 out of competition. However, it was observed that when the capacity of the firm was increased from 45000 to 50000 units, the cost per unit came out to be the same $3. 87. This can be correlated with the graph of Minimum Efficient Scale. According to Farnham(2010: 178), the Long Run Average Cost curve becomes essentially flat with neither further economies nor diseconomies of scale.

$4. 11

$3. 91

$3. 87

Q= 35000 units (Minimum Efficient Scale)

The Long run average cost curve for firm 28 depicting Minimum Efficient Scale.

Capacity Utilization Ratio (Production/Capacity) of Firm 28 is higher than Firm 25 in Pieland Moisturizing Cream Industry. The stocks not sold are also used to determine whether the firm needs to increase its capacity or not.

Firm 28 has a higher capacity utilization ratio and has sold stock in most of its periods. So it gives it the incentive to expand its through investment in new structures and investment. Usually a ratio higher than 85% gives the incentive to increase the capacity according to Farnham (2010: p 352). For firm 28 the ratio is more than 95%.

PART C: OLIGOPOLY AND GAME THEORY

The game theory models can be linked to the PIELAND MOISTURIZING CREAM industry. Moisturizing cream is highly advertisement elastic. This makes all the firms in the industry incur high advertising costs in each period. Consider the advertising costs for some of the periods for various firms:

As it can be seen, all the firms in the industry have constantly increased their advertising costs. It started with $30000 at P0 and ended up in millions. Majority of the firms (3 out of 5) suffered huge losses because of this. Advertising heavily in every period was highly essential to survive the competition and sell the product (referring table A. 1 above).

Thus in every period ‘ advertising heavily’ was the dominant strategy for each firm. If the firms had co-ordinated their strategies, the advertising costs would not have reached millions. They could have sold the cream pots at higher price with minimum advertising cost. ‘ All firms ended up worse off than if they had been able to co-ordinate their strategies. All firms became prisoners of their own strategy particularly firm 25, 26 and 27 considering the final profit figure in table C. 2’ (Farnham 2010: p258).

Though firms 28 and 29 made profits their profits could have been higher if the firms in the industry had co-ordinated and followed a co-operative oligopoly model. But the fear of punishment prevented the firms to collude (punishment from anti-trust/anti-cartel in real world).

If the advertising costs of Firm 28 are considered in particular, they have increased with every period. However, the advertising cost in P14 of Firm 28 was the lowest in the group. It was known well in advance that P14 would be the final period of the game. If Firm Id 28 had kept advertising costs similar to the other firms and for some reason it would have been unable to have good sales, my firm (firm 28) would have incurred huge loss. The lesser revenue would not have negated the effect of high advertising cost and my existing positive balance would have turned into negative. This made me reduce the advertising. The price was also brought down (as seen in table C. 3). The highest risk that Firm 28 faced during this period was :

Overhead cost = (-$84213) Variable Cost = (-$63000) (production was brought down as lesser sales were anticipated) Advertising = (-$100000) Total = (-$247213)

The positive interest was $2897. Thus the net risk becomes (-$244316). The balance in firm 28 was $289728. 51 as on P13. Thus if there are no sales in P14, there is still a positive balance of around $45412. 51 ($289728. 51 – $244316).

I considered this strategy as the best for my firm regardless of the strategy that other firms choose. ‘ I consider this scenario as the Nash Equilibrium because from a set of strategies, I have chosen the best strategy considering

that the other firms will also choose their respective best strategy’ (Farnham 2010: p 258).

PART D: IMPACT OF MACROECONOMY

The macroeconomic scenario can be evaluated on the basis of the total quantity demanded for a particular product. Let us consider the Pieland and Gritain Moisturizing cream industry:

As it can be seen from the table, the quantity demanded for units in Pieland as well as Gritain has grown in each period (except in P14 for Pieland). However, the quantity demanded curve shows a steep slope in Pieland in comparison to Gritain. This shows that the growth rate is higher in developing countries than the developed ones.

The quantity demanded has a lesser slope for periods between P1-P4 since the monetary policy was deflationary. The consumption of a non essential luxury item such as moisturizing cream is less. However, from P5 the consumption increased as the monetary policy was reflationary (interest rates were cut) causing people to spend more on cosmetics. Reflationary fiscal policy causes the reduction of either the direct or indirect taxes. This leads the people to consume more.

The reflationary policy caused accelerated growth from period 10. But accelerated growth caused inflation. It can be inferred from the graph that the governments and banks increased the taxes and interest rates. This brought the consumption down which is apparent from P13-P14. The effects of fiscal and monetary policy were more easily visible on emerging/developing economy of Pieland than on Gritain since Pieland has a

higher growth rate. A suitable monetary and fiscal policy will affect the markets of Pieland more than Gritain.