

ECONOMIC ANALYSIS OF MONOPOLY TRADE

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Abstract: Perfect competition represents an extreme case across different types of markets. In practice, companies operate under conditions of imperfect competition, which extends within the large areas, starting with the competition to another extreme - monopoly to full competition, which is expressed as a monopoly. Monopoly is essentially a company that produces and sells entire production of certain branches. As which shows the name, monopoly implies the absence of close competitors, the ability to operate on the price of products, maximization of the profit, and the like.

Keywords: Monopoly market, Full competition, Maximization of the profit

ECONOMIC ANALYSIS MONOPOLISTIC BEHAVIOR

Within the monopolistic behavior of a company analyze the production of two products (i.e. the two economic services, or two economic goods).

Total costs in relation to the production of two products, in the context of monopolistic behavior of companies, are given in the form:

$$\begin{aligned} TC_1 &= a + bQ_1^2 \\ TC_2 &= c + dQ_2^2 \end{aligned} \quad (1),$$

where TC_1 and TC_2 overall costs, and Q_1 and Q_2 are amounts of products "1" and "2".

The functional relationship between the price of the product (P) and quantity (Q) is given in the form of:

$$P = e - fQ \quad (2),$$

where $Q = Q_1 + Q_2$ - total quantity of production. Economic parameters are determined by regression analysis regarding the behavior of the market, where: $a, b, c, d, e, f > 0$.

Total revenue is:

$$TR = PQ = Q(e - fQ) = (Q_1 + Q_2)[e - f(Q_1 + Q_2)] \quad (3).$$

The profit that can be realized is:

$$\Pi = TR - TC_1 - TC_2 \quad (4).$$

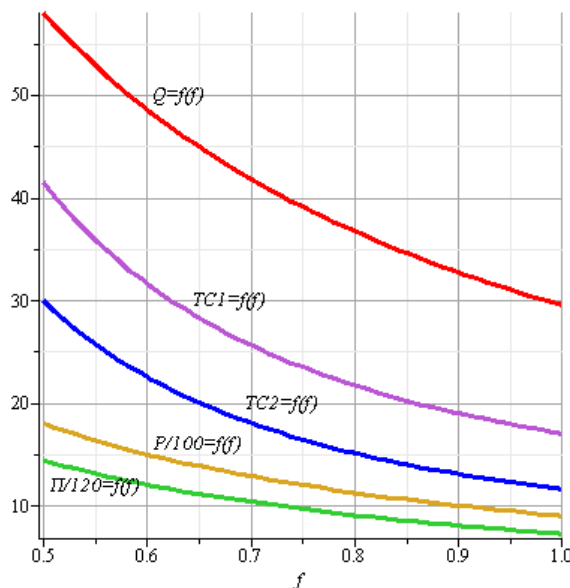


Figure 1: Characteristic values of the parameters in the function f .

Figure 1 graphically presents characteristic parameters as a function of an economic parameter f , where provide design conditions: $a=8,5$; $b=0,03$; $c=5,2$; $d=0,04$; $e=60$ ►

In relation to the resolution of this case, we get the following results:

$$Q_1 = \frac{de}{2(bf + df + bd)}$$

$$Q_2 = \frac{be}{2(bf + df + bd)} \quad (5).$$

$$Q = Q_1 + Q_2 = \frac{e(b + d)}{2(bf + df + bd)} \quad (6).$$

$$P = \frac{e^2(b + d)(bf + df + 2bd)}{(bf + df + bd)^2} \quad (7).$$

$$TC_1 = a + \frac{b(de)^2}{4(bf + df + bd)^2} \quad (8).$$

$$TC_2 = c + \frac{d(be)^2}{4(bf + df + bd)^2} \quad (9).$$

$$\Pi = \frac{e^2(b + d) - 4b(ad + cd) - 4bf(a + c) - 4fd(a + c)}{bf + df + bd} \quad (10).$$

Next we will consider the case when costs are given as a nonlinear and linear function:

$$TC_1 = a + bQ_1^2$$

$$TC_2 = c + dQ_2 \quad (11),$$

while other conditions remain the same.

For this case given:

$$Q_1 = \frac{d}{2b}$$

$$Q_2 = \frac{be - d(b + f)}{2bf}$$

$$Q = Q_1 + Q_2 = \frac{e - d}{2f} \quad (12).$$

$$TC_1 = a + \frac{d^2}{4b}$$

$$TC_2 = \frac{b(2cf + de) - d^2(b + f)}{bf} \quad (13).$$

$$\Pi = \frac{be^2 + d^2(b + f) - 2b[2f(a + c) + de]}{4bf} \quad (14).$$

In relation to the total cost of the second product can be determined by appropriate maximum value:

$$TC_{2(\max)} = \frac{8bcf + be^2 + 8cf^2}{8f(b+f)} \wedge d_e = \frac{be}{2(b+f)} \quad (15).$$

In relation to the profit can be determined corresponding minimum value:

$$\Pi_{\min} = \frac{e^2 - 4(a+c)(b+f)}{4(b+f)} \wedge d_e = \frac{be}{b+f} \quad (16).$$

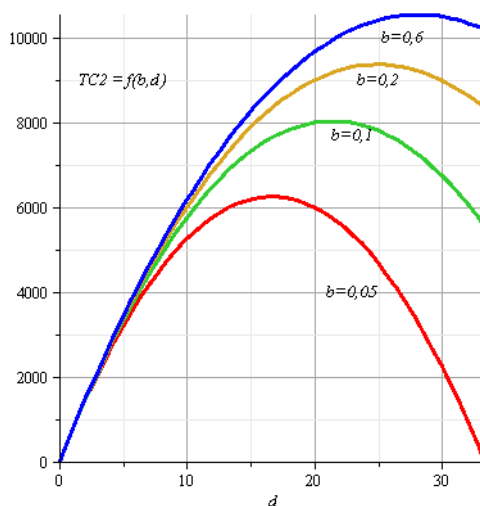


Figure 2: Total cost TC_2 as a function of parameters b and d .

In relation to the maximum value of the total costs for the products “2”, and in relation to the realized profit given diagrams corresponding to figures 2 and 3.

It can be seen that the maxima of parametric curves, the higher the value of the parameter b , shifted to the right; compared to parametric curves related of profits, for larger values of the parameter b , minimums have also moved to the right.

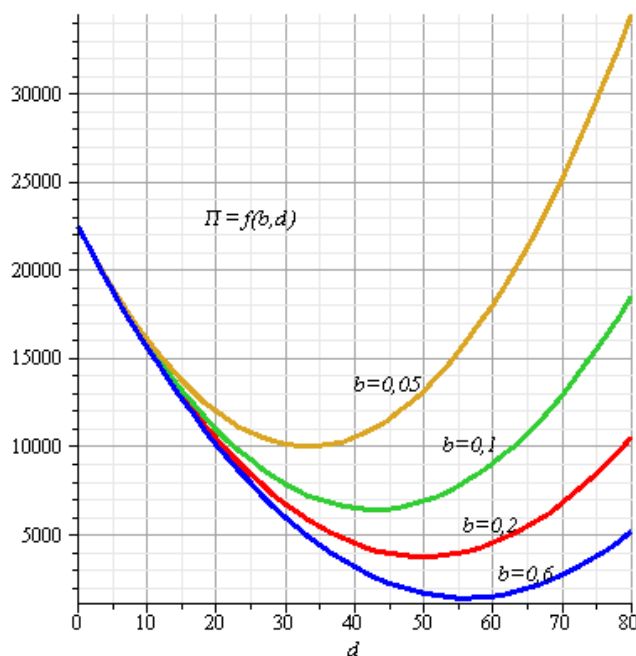


Figure 3: Profit as a function of parameters b and d .

CONCLUSIONS

Economic analysis at the monopolistic behavior of a company shows that the realized profit is fundamentally dependent on the functional dependence of the price of the product, production volumes, then the shape of total costs.

Depending on the aforementioned principle can be linear and non-linear shapes, depending on the condition monitoring market.

Also it is important to note that in most cases the practice may determine the minimum value of the total cost, and the maximum size of its profits.

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