

Oum El Bouaghi University

**Faculty of Economic, Commercial and
Management Sciences**

**lectures in
Microeconomics 2**

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This work is a summary of the lectures that are presented to first-year students in economics for the microeconomics module and is the fruit of teaching the microeconomics scale for more than twenty **years. It** has been adapted to the new ministerial program, to be a tool in the hands of students to help them understand more of this subject, which represents one of the basics of basic training for the specialization of economic sciences.

Prior knowledge:

Control mathematical tools such as propagation, reduction, calculus and matriculation.

1- Market equilibrium in case of perfect competition:

Total competition is characterized by the presence of a very large number of sellers and buyers, each of whom has a very small part of the quantity offered or requested. As a result, no change in the behavior of a producer or consumer has an impact on supply or demand.

2-1- Characteristics of full competition:

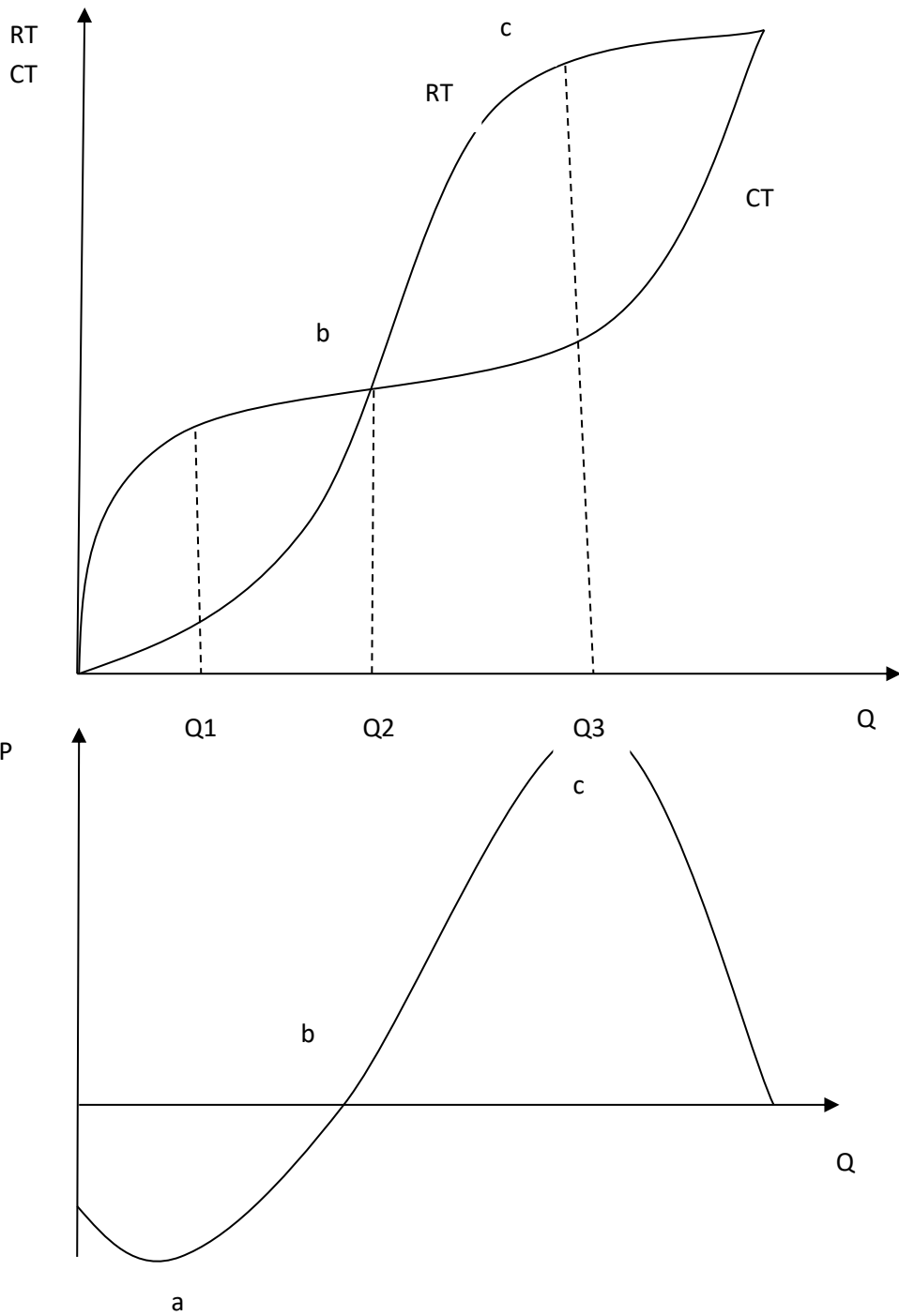
Since in the market of complete competition, the producer or consumer does not affect supply or demand, and therefore there is no impact on the price by virtue of the fact that the product is small in light of a large number of producers,

That is, the price is fixed and the producer or consumer is the recipient of the price. The market for perfect competition requires the development of the following hypotheses:

- the presence of a large number of producers and consumers;
- homogeneity of the goods sold and therefore the product cannot change the price;
- There are no barriers to entry or exit to and from the market;
- Full knowledge of market conditions.

1-1- Short-term product balance

If the product aims to maximize profit, this happens when the difference between total revenue and total cost is as great as possible. The following figure illustrates this:



We note that the product achieves a loss in the first stage until it reaches the largest loss at point A and then the loss decreases until it is equal to zero at point B, after that the institution makes a profit and reaches the greatest level when picking up C then the difference between the total revenue and the total cost is the greatest possible.

Profit is the difference between total revenues and total costs:

Profit = Total Revenue - Total Cost

$$\pi = RT - CT$$

Profit is considered as a function of the quantity sold.

$$\pi = f(Q)$$

To maximize profit, we derive the profit function.

$$\frac{\delta \pi}{\delta Q} = \frac{\delta RT}{\delta Q} - \frac{\delta CT}{\delta Q} = 0$$

$$\frac{\delta RT}{\delta Q} = \frac{\delta CT}{\delta Q}$$

$$r_m = c_m$$

Since $R_m = P$

Because the price is fixed, the equilibrium condition in case of perfect competition:

$$P = R_m = C_m$$

So under full competition, the price is marginal revenue, and the average revenue is the same as the price in all cases, but the difference in the case of perfect competition is that the price is marginal revenue.

Marginal revenue is the change in total revenue resulting from the change in the number of units produced by one unit, and since the total revenue increases at a constant rate, this means that marginal revenue remains constant and equal to the price.

Product supply curve in the short term:

The product supply curve in the short term is the marginal cost curve when it starts from the closing point, which is the point at which the marginal cost curve and the variable average cost curve intersect when the latter is at its lowest level.

In order for the product to be offered, the price must be greater or at least equal to the average variable cost. When the price is equal to the average variable cost, this means that the producer will incur losses equal to fixed costs, at which point the enterprise closes or continues to produce it will incur losses equal to fixed costs, and higher than this price, i.e.

$CVM < P$ It is in the interest of the enterprise to continue to produce even if it incurs a loss. But if the price $CVM > P$ It is in the interest of the enterprise to stop production and bear a fixed cost only. And the institution does not make a profit unless $CTM < P$ The following graphic illustrates this:

Here in the above graph, we find that the institution can make average profits, "we sometimes call them extraordinary profits or circumstantial profits", and the institution can make normal profits, and the normal profit that the organizer takes, which is the wage of his work as an organizer and the interest on his capital, and therefore the fee is equal to the marginal cost. If the first case there can be an extraordinary profit $P > CTM$, the second case there can be a normal profit $P = CTM = C_m$, and the third case there can be losses but less than the fixed costs i.e. $CTM > P > CVM$. In these three cases the enterprise will continue to produce in the short term. In the fourth case, the loss is large, i.e. the revenues do not cover fixed costs, and here The enterprise is supposed to close, and we remember that the third case, which is related to the first stage of production, is in which the average production increases until it reaches its highest level, in other words it is the case in which the average variable cost decreases until it reaches its lowest limit. Therefore, we find that the first stage is uneconomical because production at that stage can achieve losses greater than fixed costs.

1-2- Maximize profit in the long period

In the short term, the enterprise can incur losses but less than fixed costs. In the long run, however, it cannot sustain consecutive losses and exit the market.

If the sector has average profits that are attractive to other institutions and urge them to enter in the long term, the supply rises, the price falls, and the average profit disappears. Conversely, in the event that the institutions make losses, there are institutions who will exit the market, the supply decreases, the price rises, and the loss disappears.

So the imbalances in the market are circumstantial and then return to equilibrium, and if costs are constant, the equilibrium point does not change in the long run. If the entry of new producers into the market leads to a rise in factor prices, and therefore costs, equilibrium prices will rise.

Example

We have a fully competitive market in which 100 typical institutions cost each institution

السعر P الكمية و Q حيث $Q = 1240 - 5P$ و دالة الطلب للسوق $C = 5Q^2 + 8Q + 125$

Required

- A- Is it about the short term or the long term, the reasons for your answer?
- B. Select the display function for each organization
- C- Determine the profitability threshold and the closure threshold for each institution
- D. Determine the aggregate supply, price and equilibrium quantity function in the market

2- Market equilibrium in case of monopoly or absolute

3.1 The concept of total or absolute monopoly

3.1.1 Definition

Total monopoly is characterized by the uniqueness of only one product in the production of a commodity that has no alternatives close to it, and this means that this commodity cannot be dispensed with or cannot be replaced by another commodity. Thus, the monopolistic enterprise has the freedom to set the price but cannot control demand, and the supply curve of the enterprise is the market supply curve.

3.1.2 Causes of absolute monopoly

There are several reasons that lead to the emergence of absolute monopoly, namely:

- **Natural monopoly:**

In some cases, the market cannot afford more than one product such as electricity, gas, fixed telephone and rail transport. It achieves economies of scale because it can produce large quantities, and thus can get a low average cost that benefits society, but if there is a natural monopoly, it is better for the state to regulate it because if it is left to operate as a monopoly, it will harm society because it will always impose high prices.

- **Patent:**

If a company invents a new product, it is 60 years old for it for a certain period of time

This makes the patent as a reward for the product for its continued production.

- **Regulations and Laws:**

Sometimes some countries franchise a certain company to produce a certain commodity, and thus this company becomes a monopoly by force of law.

- **Producer or cartel agreement:**

It is a conglomerate or grouping or agreement between some institutions so that they adopt a unified decision, and therefore the existence of a number of companies, but their decision is unified and they exercise their powers as if they were a monopoly.

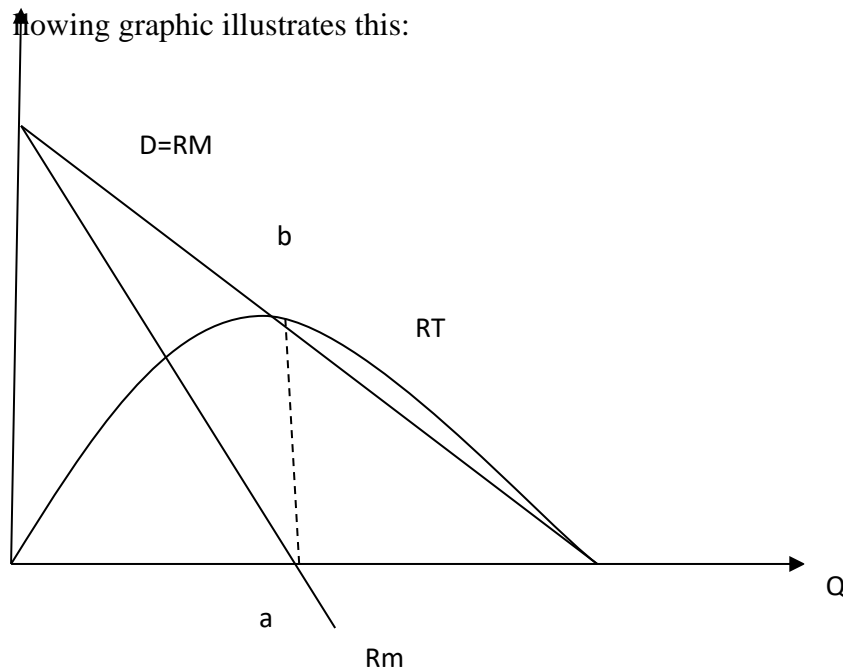
- **Monopoly of basic raw material:**

If the commodity produced includes a basic material monopolized by a certain company, such as bauxite, which is used in the production of aluminum, this means that other companies cannot produce this commodity because the basic material does not exist with them, and therefore the institution that has the basic material has a monopoly on the production of this commodity.

1-1- Monopolist balance

Since the monopolist is the only exhibitor in the market, the demand curve for the commodity is above the marginal revenue curve because the monopolist always imposes a price higher than the marginal revenue $P > R_m$.

The following graphic illustrates this:



The monopolist does not control the price entirely because it represents the supply side, and there are those who represent the demand side, which are the consumers. Hence, imposing the highest price does not necessarily mean achieving maximum profit because demand decreases and may be equal to zero, and therefore consumer demand determines the price of the monopolist and therefore the price is a function of the quantity requested.

The demand curve facing the monopoly product is the same as market demand in the form of a top-down curve to the right and is the same as the average revenue curve, always price. That is, $D = RM = P$. The marginal revenue curve is below the average revenue curve because the monopolist always imposes higher prices than marginal revenue. As for total revenue, it rises until it reaches an upper limit and then decreases.

The relationship between marginal revenue and elasticity is as follows:

Marginal Revenue = \times Price $(1 + 1 / \text{Flexibility})$

$$Rm = (1 + \frac{1}{E})$$

We note that the relationship is inverse between marginal revenue and elasticity, if we take, for example, a case if demand is equal elasticity, it means that elasticity ($E = -1$), marginal revenue is equal to zero.

The monopolist maximizes his profit when marginal revenue is equal to marginal cost.

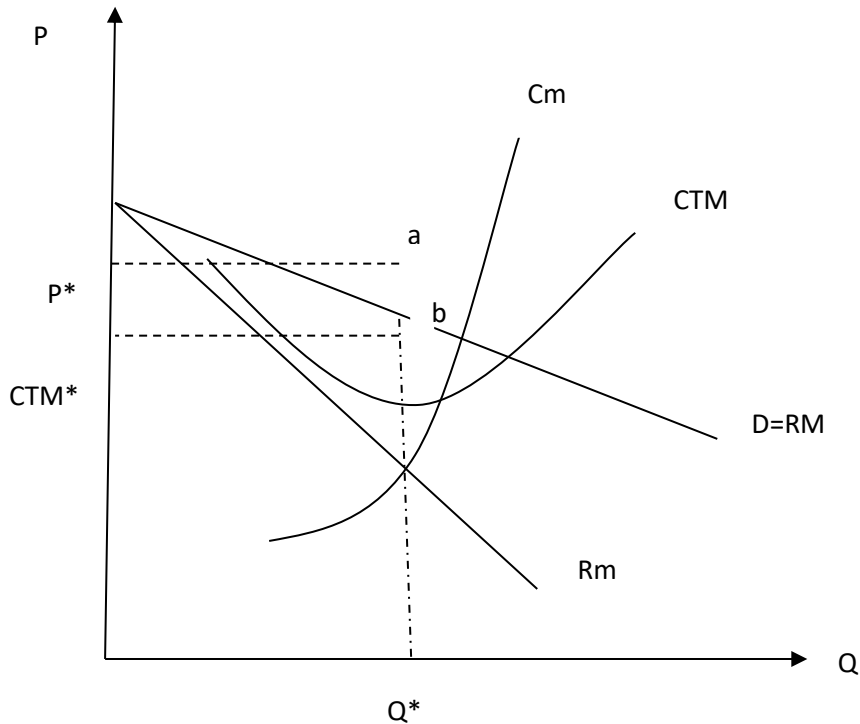
$$\pi = RT - CT$$

$$\frac{d\pi}{dQ} = \frac{dRT}{dQ} - \frac{dCT}{dQ} = 0$$

$$\frac{dRT}{dQ} = \frac{dCT}{dQ}$$

$rm = cm$

The monopolist balance can be represented as follows:



We note from the drawing that the necessary condition for the equilibrium of the monopolist is that the marginal cost is equal to the marginal revenue, and at the intersection of the marginal revenue curve with the marginal cost curve, that is, $R_m=C_m$ represents the monopolist equilibrium point. The monopolist produces Q^* , sells it at P^* and as the monopolist tries to maximize his profit, he will charge the consumer a higher price.

It bears a unit cost of CTM^* and the profit of the monopolist is:

$$=(P^*-CTM^*)Q^*\pi$$

And the monopolist won represented by the rectangle area P^*CTM^*ab

We conclude that the monopolist controls the price but must take into account the wishes of consumers.

The profit of the monopolist is extraordinary, because ordinary profits are when the total revenue is equal to the total economic costs and this is only in the case of complete competition in the long term, but for the monopolist's profit in the long term, if the monopoly of the product and the rest of the other factors are fixed, he continues to achieve these profits even in the long term.

Example

You have the demand function for a monopolized good as follows: $Q=50-0.5P$

The cost function is as follows: $C = 50+40Q$

Asks: Find the price and quantity of the monopolist balance?

1-2- Regulation of monopoly by the state

Since the monopolist can exploit his price control and impose high prices that harm the interest of the consumer, the state intervenes to regulate the monopoly in several ways:

3.4.1 Price fixing

The state may set the selling prices of the monopolist may reach a level lower than the average cost and thus achieve a loss, and in order to continue production, the state grants him a subsidy that covers that loss, such as setting the prices of electricity and gas.

3.4.2 Taxation of the monopolist

In some free economic systems or some sectors, the state cannot set the price, so it imposes a tax that may absorb part of the extraordinary profit made by the monopolist, for example, the additional tax imposed by Algeria on extraordinary revenues from oil.

1-3- Discriminatory monopoly

The monopolist can impose two or more prices in order to maximize profit, often in the services sector, and this requires the availability of two conditions:

- The price elasticity of demand should be different for each market
- Inability to transfer the commodity between markets

The monopolist profit function is written as follows:

$$= RT_1(Q_1)+RT_2(Q_2) - CT(Q_1+Q_2) \pi$$

where $RT_1(Q_1)$ represents the total revenue in the first market.

$RT_2(Q_2)$ الأيراد الكلي للسوق الثاني

$CT(Q_1+Q_2)$ التكلفة الكلية التي يتحملها المحتكر

To maximize the profit of the monopolist, we derive the profit function and then equate it to zero for the variables Q_1 and Q_2

1- oligopole oligopoly

- 1-1- Definition: In the case of oligopoly, the number of producers is few, the market agents are controlled by a small number of producers, each of whom can influence the market, if they are two, we are in a double monopoly (such as iron and cement), and if the product is homogeneous, we are in a state of monopoly of a pure oligopole pure, but if the product is heterogeneous, we are in a state of monopoly of a distinct few (such as cars, soap, perfumes).

In the case of oligopoly, each product is provided by a few enterprises whose decisions greatly affect the price of the product and the volume of supply, and each product takes into account the demand curve for its products, its production costs, as well as the reactions of its competitors, and competition is done by advertising and quality.

If the products are homogeneous, once one of the producers reduces its price, consumers turn from the demand for the goods of his competitors to the demand for a commodity, as well as the phenomenon of oligopolies is called mutual dependence, and this means that the product in the oligopoly has to study and analyze the effects and reactions of other producers and the oligopoly differs from complete competition and monopolistic competition in the presence of many obstacles (technique etc) make it difficult to enter the market for new producers.

If the oligopoly is characterized by mutual dependence between producers, that is, trying to know the reactions of other producers with regard to their production and prices, and that if he changes his production or price, so when we study the monopoly of the oligarchy, we will study several models.

2- نموذج كورنو Cournot's model

Known as le double satellitisme, this model addresses the situation of a binary monopoly and is based on the following assumptions:

- The existence of two institutions selling similar goods and each of them knows exactly the amount of total demand in the market and therefore the production directed to the market $Q_1 + Q_2 = Q$ as the market prevails at one price, which makes any adjustment made by either of them is at the level of production and not at the level of price.
- The absence of secret agreements that would lead to the division and control of the market to achieve maximum profit.
- Each institution seeks to maximize its total profits, and in this it assumes that the other institution maintains its previous production, that is, it is not affected by the actions it takes, and therefore the reaction of the two institutions is in opposite

directions, and in any case, the level of sales that maximizes the profit of each of them is located in the middle of the demand line, i.e. we have $e=1$

If Q_1 represents the production of the first enterprise and Q_2 the production of the second enterprise, then market demand = $Q_1 + Q_2$

The market price is determined by the demand function demand function $P=f(Q)=f(Q_1+Q_2)$

Price agents depend on what the producers offer.

The total revenue of any product depends not only on the volume of its production, but also on the volume of production of its competitor because:

$$I \quad \text{الإيراد الكلي للمنتج} \quad RT_1=PQ_1=F(Q_1+Q_2)Q_1$$

$$II \quad \text{الإيراد الكلي للمنتج} \quad RT_2=PQ_2=F(Q_1+Q_2)Q_2$$

The two profit functions: Π_1, Π_2 for these two products depend on each other:

$$\Pi_1 = RT_1 - CT_1 = F(Q_1+Q_2)Q_1 - CT_1(Q_1)$$

$$\Pi_2 = RT_2 - CT_2 = F(Q_1+Q_2)Q_2 - CT_2(Q_2)$$

Where CT_1 and CT_2 represent the total cost borne by the first and second product, and to maximize profit, it is necessary to make the serious revenue RM equal to the serious cost CM

$$I \quad \text{Reaction Function} \quad RM_1(Q_1+Q_2) - CM_1(Q_1) = 0 \quad II$$

$$\text{Reaction Function} \quad RM_2(Q_1+Q_2) - CM_2(Q_2) = 0$$

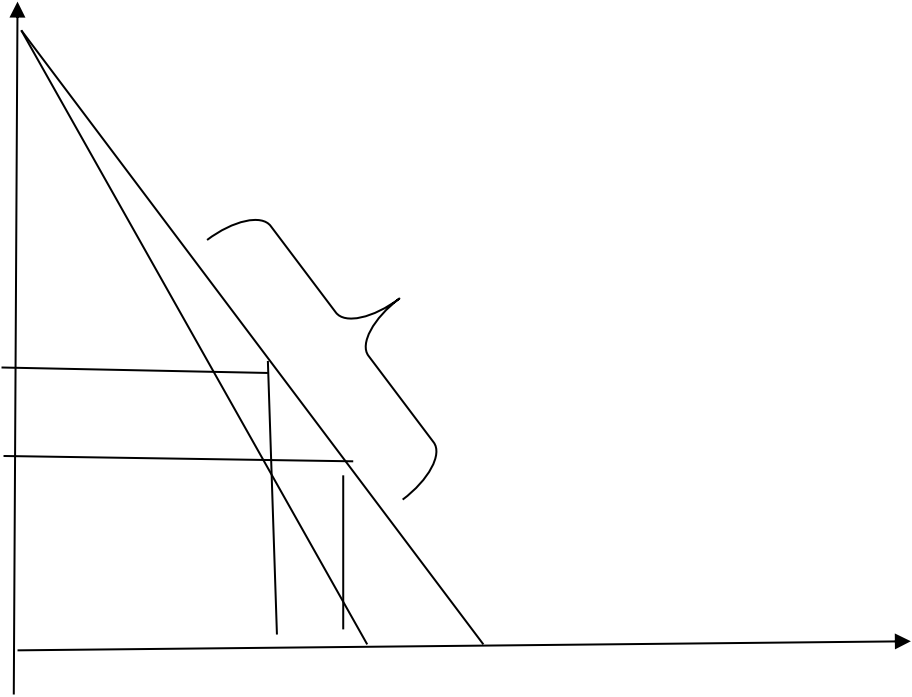
We note that the profit maximization equation for each product depends on the volume of production of each of them and the previous equations are called verb functions and can be solved by determining both Q_1 and Q_2

ابجديات نموذج كورنو Cournot's model

To avoid taking into account production costs, choose Cornu as an example: Two identical mineral water springs owned by Foundation A and B

The average and serious costs are non-existent, if we assume that product A has already and if it is the only product and based on market demand, the profit achieved by A is greater if

it displays the quantity $0Q_1$ so that the serious revenue RM is equal to the serious zero cost $CM=0$ and the price at this level is P_1 as shown in the figure:



When product B enters the market, it will assume that seller A will continue to sell the quantity $0Q_1$, he only takes into account the ED part of the remaining demand in the market, so seller B adapts to this situation and in order to maximize his profit, he displays the quantity $Q_1 Q_2$ (where Q_1 is in the middle of $0D$ and Q_2 is at $1/4$ of $0D$, i.e. D_2 is located at $1/2$ of Q_1D or a quarter of the market, so the price stabilizes from the market P_2 and then seller A adapts to the new situation, so that it assumes seller B continues to sell $1/4$ of the total product and in order to maximize his profit he produces first (for product A):

First of all:

Secondly:

The special developments in the market to adapt between A and B will continue until A produces each time half a quarter of the market or: $\frac{1}{8}$ from the new status QD of

$$\frac{1}{2} - \frac{1}{8} - \frac{1}{32} - \frac{1}{128} = \frac{1}{3}$$

The B produces each time it gains a quarter of the market from the new situation: QD of

$$\frac{1}{4} + \frac{1}{16} + \frac{1}{64} + \frac{1}{256} = \frac{1}{3}$$

In general, equilibrium status is achieved when both A and B are a QD satisfaction

$$\text{contract.} \frac{2}{3} = \frac{1}{3} + \frac{1}{3}$$

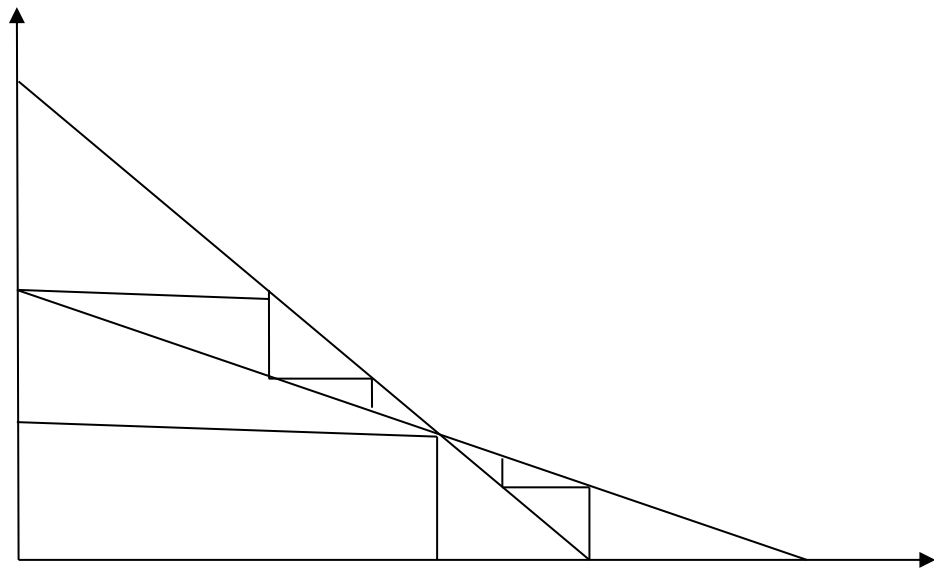
If there are three products, they offer $\frac{3}{4}$ from QD

In the case of a M product, their offer in the market is from $\frac{M}{M+1}$ QD.

The larger the number of producers, the closer the market is to the situation of complete competition, and the evolution of adaptation modes can be represented by the so-called reaction lines les droites de réactions.

The point of intersection of reaction lines is called the Cornut point de Cournot and this point indicates the equilibrium position.

(Stable Equilibrium)



Note: The price in the Cornu model is equal to $\frac{2}{3}$ of the monopolist price and therefore the profit is equal to

$\left(\frac{2}{3}\right)$ of the full profit of the monopolist.

Example: Suppose that the serious revenue of the first product $RM1 = 100 - Q1 - 0.5 Q2$

Suppose that the serious revenue of the second product $RM2 = 100 - Q2 - 0.5 Q1$

And that the serious cost of the first product $CM_1=5$

The serious cost of the second product $CM_2=Q_2$

And that the demand function is: $P = 100 - 0.5 (Q_1 + Q_2)$

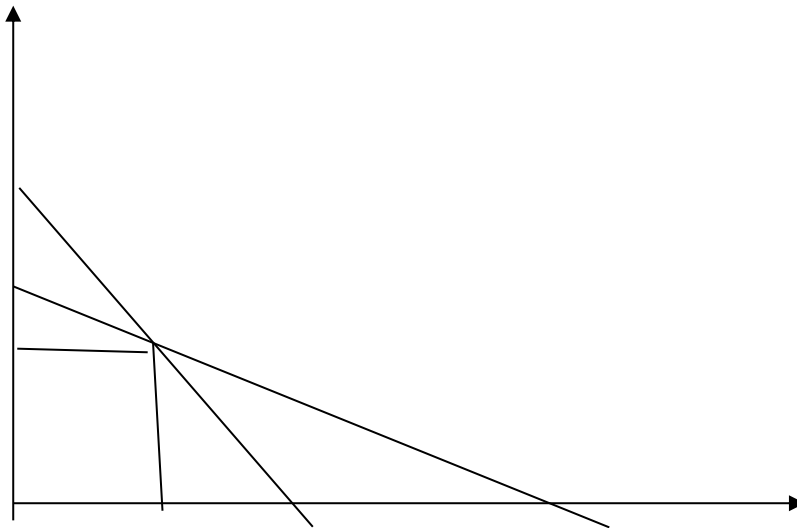
Determine the optimal production volume for each product at the current stage:

Solution: The two reaction functions for each product are: $RM_1 - CM_1 = 0$

First product reaction function: $100 - Q_1 - 0.5Q_2 - 5 = 0 \text{ ----- } 95 - Q_1 - 0.5Q_2 = 0$

Reaction function of the second product: $100 - Q_2 - 0.5Q_1 - 5 - Q_2 = 0 \text{ ----- } 100 - 0.5Q_1 - 2Q_2 = 0$

Solving these equations we find



This can be found geometrically:

Reaction function 1: $Q_1 = 0Q_2 + 190$

$Q_2 = 0Q_1 + 95$

Reaction function 2: $Q_1 = 0Q_2 + 50$

$Q_2 = 0 \text{ ----- } Q_1 = 200$

3- نموذج ستاكل برغ The Stackelberg Model

The Stuckle Barg model is distinguished between the leading product (Le Maitre), which is the product that controls the price due to its almost complete control of the market, and the dependent product (steering wheel) Fol Loer, which is that product that acts based on the behavior of the leading product.

The leading producer assumes that his competitor will act as a child producer and can maximize profit based on the reaction function of his competitor to assume the same example as before:

$$\text{First product: } RM1 = 100 - Q1 - 0.5Q2$$

$$\text{Second product: } RM2 = 100 - Q2 - 0.5Q1$$

$$\text{The serious cost of the first product: } CM1 = 5 \quad CT1 = 5Q1$$

$$\text{The serious cost of the second product: } CM2 = Q2 \quad CM = Q2$$

Assuming that product 1 is the leading product and product 2 is the dependent product, the reaction function of product 2 is: $100 - Q2 - 0.5Q1 - Q2 = 0$

$$100 - 0.5Q1 - 2Q2 = 0$$

$$Q2 = 50 - 0.25Q1$$

To maximize profit, product 1 substitutes Q into its profit function for the purpose that the market demand function is $P = 100 - 0.5(Q1 + Q2)$.

where h represents the market price then:

$$\text{Product Profit Commander 1: } \pi_1 = PQ1 - C(Q1)$$

$$\pi_1 = (100 - 0.5(Q1 + Q2)) Q1 - 5Q1$$

$$\begin{aligned} & Q1 + (50 - 0.25Q1) \quad Q1 - 5Q1 \quad 100 - 0.5 = \quad \left[\quad \left[\quad \right] \right] \\ & = 100Q1 - 0.5Q1^2 - 25Q1 + 0.125Q1^2 - 5Q1 = 70Q1 - 0.375Q1^2 \end{aligned}$$

By differentiation and then execution of the derivative we find: $=RM1 - CM = 70 - 0.75Q1 = 0$
 $\frac{D\pi}{DQ1}$

$$\text{Production quantity for the product 1 unit } Q1 = 93.33$$

$$\text{Production quantity for the product 2 units } Q2 = 50 - 0.25 Q1 \text{ ----- } Q2 = 26.66$$

$$\text{Market Price: } P = 100 - 0.5 (Q1 + Q2)$$

$$= 100 - 0.5(93.33 + 26.66)$$

$$40P \sim \text{---}$$

We note that leadership actions led to greater production and lower price imposition than in the Cornu model (because the leading product has a lower cost).

4- الاتفاق بين المؤسستين cartel case between the two companies

In the case of double control or the hypothesis of behavior of le comportement de bowley, each institution enters into its calculations the reaction function of the other institution to maximize its profit, and this leads to a stable point les point d'équilibre stable, and for this the two institutions must agree to maximize the total profit, which is what we call the market sharing **cartel**.

Definition: It is an organization that includes institutions in a specific industry or production for the purpose of increasing the total profits of the sector and it is an informal agreement on market sharing and its advantages include:

- Determining the price and share of each member product and the work of the branch is like a monopolistic business.
- It is not possible to determine the quantities sold that are controlled by demand (such as monopoly), and the cartel can take the problem of the price leadership model, by which we mean that the institutions within the sector are led by one institution called the leading institution that is in control of at least 40% of the total market supply and determines the price like the monopoly enterprise, and then involves other institutions that sell the rest of the total demand volume within the specified price framework.

$$\pi_G = \pi_1 + \pi_2 = PQ_1 - Q_1 + PQ_2 - CT_2$$

The general profit function is written as follows:

For examples:

$$\begin{cases} \pi'_{GQ1} = 0 \\ \pi'_{GQ2} = 0 \end{cases}$$

And sufficient condition:

$$\begin{array}{l} Q_2 > \\ Q_2 \end{array} \quad \begin{array}{l} \pi''_{GQ1} < 0 \text{ et } \pi''_{GQ1} < 0 \\ 0 \end{array} \quad \begin{array}{l} \pi \\ \pi \end{array} \quad \begin{array}{l} \pi''_{GQ1} \\ \pi''_{GQ2} \end{array} \quad \begin{array}{l} \pi \\ \pi \end{array} \quad \begin{array}{l} \pi''_{GQ1} \\ \pi''_{GQ2} \end{array}$$

The price is raised at the expense of the consumer, where the quantity sold decreases and the profit rises more than the Cournot model as well as the Stackelberg, and this situation helps the leading institution more.

In the case of equal market sharing: there is the quantity sold $Q_1 + Q_2 = Q$ where $Q_1 = Q_2$

$$Q_2 = \frac{Q}{2}, \quad Q_1 = Q = Q + \frac{Q}{2} \text{ حيث } \frac{1}{2} Q \frac{1}{2} \text{ و بالتالي}$$

$$\text{وتكون دالة الربح } \pi = P - C + 2 \left(- C + 1 \left(G = P \frac{Q}{2} \frac{Q}{2} \right) \frac{Q}{2} \right)$$

$$\text{" : عن الأمثلة } \quad G Q Q < 0 \pi \quad ' G Q = 0 \text{ -----p}$$

The market is shared, but there is no leading product so it is shared equally.

Example: In case of agreement

In case of equal market sharing:

Incompatible balance with commodity difference: If we have two institutions in a state of monopoly binary 1 and 2 each institution determines its prices based on the prices of other institutions, we find that the reaction functions of each institution based on the decision of the other institution and we have between either mutual dependence or that one institution is a leader and the other is subordinate.

Example: Let us have two enterprises in a two-cost monopoly each:

$$CT_1 = 2Q_1 \text{ -----}$$

$$CT_2 = 4Q_2 \text{ -----}$$

The products are heterogeneous and the demand functions are as follows: $Q_1 = 50 - 2P_1 + 3P_2$ $Q_2 = 60 + P_1 - 4P_2$

P_1 and P_2 represent the prices of products 1 and 2 for each organization.

Required:

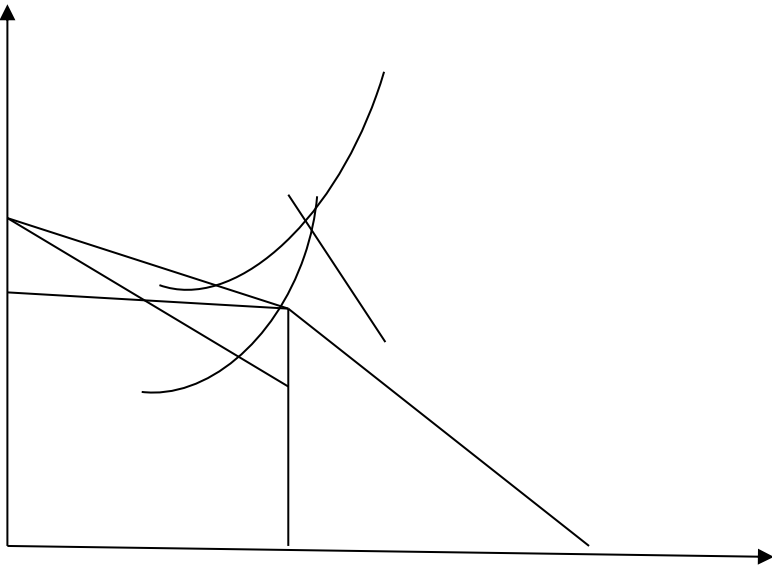
- 1- Define price reaction functions for each organization.
- 2- Determine the balance in case of mutual dependency .
- 3- What happens if the first institution in the leader where you determine is the price .

Solution:

Reaction functions show how to make the decision to determine the price based on the prices of the competing institution, and for this it is necessary to maximize the profit for each institution.

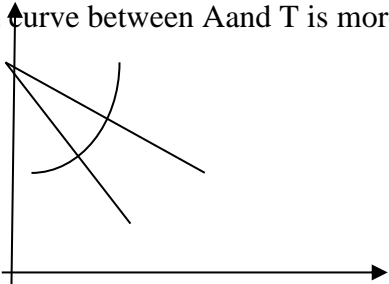
6- Siwiezi Broken Application Form : The concept of broken order was introduced by Paul Sweezy

In 1939 in order to find out the reason for the rigidity of selling prices under the monopoly of the oligarchy, when prices unite under this type of markets remain mostly fixed for several months and even for several years sometimes no matter how much demand or cost changes in the absence of agreement between the producers, if the model institution raises the price, the competing institutions will not raise its price and therefore the institution remains on the AT part of the demand as it is in the figure.



If the institution reduces the price, the competing institutions react by reducing its prices, and thus the institution remains on the TZ curve of the demand direction, and as long as the new serious cost curve (broken demand) still cuts the serious revenue at the vertical part of it, the price remains fixed at the level of refraction P_0 and the quantity produced remains at the level of refracted Q_0 .

We see that the demand curve between A and T is more flexible than cutting.



TZ

This refraction results in a gap in the serious revenue curve RM at the quantity Q_0 between points B and C, and we note from the figure that the change in the serious cost curve cm does not affect production or price, but the volume of production Q_0 and price P_0 remain to achieve the maximum possible profit.

In general, the idea of price stability is based on the fact that the serious productivity of the institution is going through the gap in serious revenue, which makes the product does not want to change its price, and it is worth remembering that this model does not change how the equilibrium prices were reached, nor how they are determined, but only explained how the careful behavior of the institution keeps prices fixed (rigid).

Example: An enterprise that produces and sells synthetic fabrics in a market that it shares with another enterprise and its business interests have concluded that the demand function for its products is as follows: $P \geq 14$ for $Q = -2P + 40$

$$P \leq 14 \text{ من أجل } Q = -P + 33 \frac{3}{2}$$

Required:

- 1- Conclude the functions of total revenue and serious revenue of this institution at a price level greater and less than 14.
- 2- For example, graphically, the demand for the production of the enterprise as well as its revenues are serious in the same parameter.
- 3- Assuming that the serious cost function is given as follows: $Q + 1.5 \text{ cm} = \frac{1}{2}$

Like it on the same previous parameter and determine the equilibrium point of this product.

- 4- If the serious cost decreases and becomes represented by the $Q + \text{cm}' = \text{function} \frac{1}{2} \frac{1}{2}$

Does the balance point of the product change and does its profit change?

- 5- Calculate the price elasticity of the demand before and after it breaks.

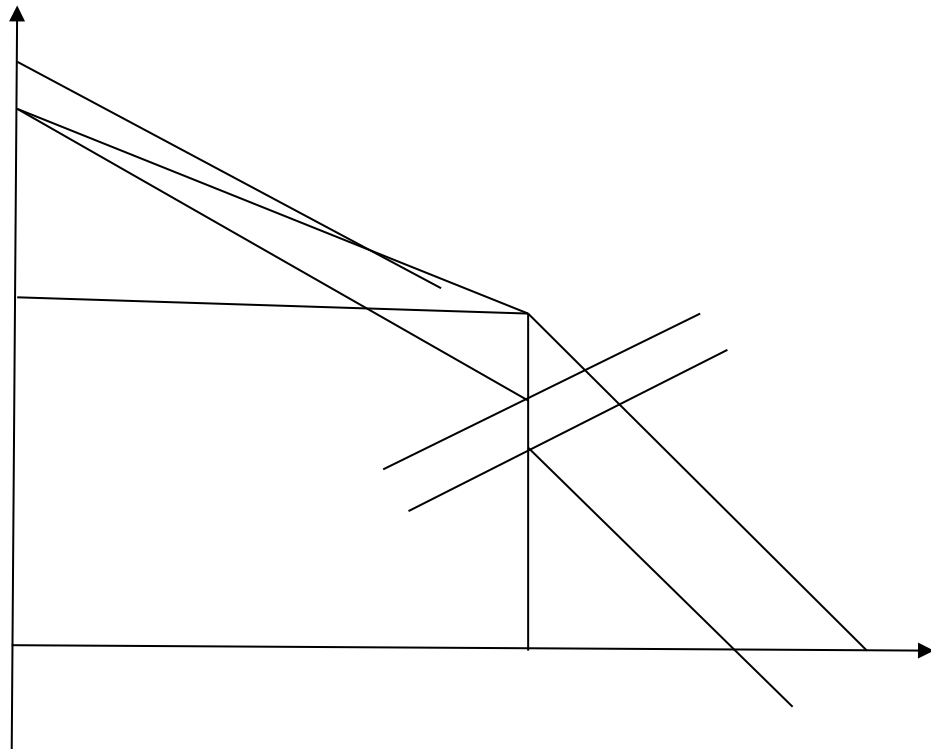
Solution:

1- Conclusion:

2- Graph : for the serious demand and revenue function when the price is greater and smaller than 14 DA

$Q = 16.5 \dots \dots$ RM-0 means that the producer will not choose to produce a larger quantity because its serious revenue becomes negative.

The refraction point of the demand function at point C where $Q = 12$ RM1=RM2-----
 $Q = 12$



The point c corresponds to the non-continuation of the serious revenue function, where we find two values, if the goal is to increase the price and reduce the quantity, $rm = 8$, but if the goal is to reduce the price and increase the quantity sold, $rm = 6$.

Since the greatest profit is achieved when the product is balanced when $rm=cm$, we notice that when cm decreases to cm' it does not lead to a change in equilibrium, only because there is a break in serious revenue.

If a decrease in cm means a decrease in RM , which leads to an increase in the profit per unit and then an increase in RT , then it is not in the interest of the producer to increase or decrease its production, unless the serious cost trend cuts the RM trend in one of its two continuous parts.

3- Calculation of price elasticity at C

This means that the increase in the price leads to a decrease in the quantity sold by 2.33% and a decrease in the price leads to an increase in the quantity sold by 1.75%.

That is, when the product is raised from the price, the rest of the producers will not keep pace with it, which loses part of the customers.

If the other institution lowers its price, it must do the same to prevent it from acquiring its customers.

7 كارتل تقاسم السوق the quota Cartel

A cartel is defined as an organization that includes institutions in a particular industry for the purpose of increasing the total profits of the goods, and in this organization the institutions agree informally to share the market and in order to increase the gross profit as it was before.

- It determines the price and share of each member product and the work of the productive branch is oriented towards the work of the monopolist.
- He may be persuaded to coordinate the terms of sale and set prices, but without specifying the quantities.

In theory, the best production of the cartel is that which makes the serious cost of each enterprise equal to the serious revenue of the group.

The cartel can take the form of a price leadership model, which means that institutions within the industry are led by a single enterprise called the leading enterprise and that controls at least 40 % of the total market supply and sets the price like a monopoly enterprise, and then lets other institutions sell what they can sell within the specified price framework.

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