Foundation Course in Managerial Economics
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Lecture - 40
Oligopoly Pricing

Hello and welcome back to our discussion on oligopoly. We have looked at possible oligopolistic decision making process through game theory and in this module we are going to look at pricing in case of oligopoly. So if oligopolistic firm behaviour is ruled majorly by the moves and actions of the rivals then how do the oligopolistic firms decide what prices to charge and what output to produce.

So there are certain implications of the prisoner's dilemma on pricing. So we have seen already with lot of examples that because the prisoner's dilemma exists that is the dilemma whether to collude whether to trust the other players and stick to the agreement or whether to go by one's own self-interest this is the dilemma that all the firms are facing and that is the reason that pricing choices could be different.

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Implications of the Prisoner's dilemma on pricing

- Kinked demand curve – Demand is kinked at the currently prevailing price and is elastic above this price and inelastic below
- Price rigidity – Producers are reluctant to change prices even if costs or demand changes
- Price signalling – Implicit collusion where a firm initiates a price rise with the hope that the other will follow suit
- Price leadership – One of the firms acts as the price leader and announces price changes and the other firms follow

So what are the implications of this dilemma on pricing in case of a oligopoly firm? First is the kinked demand curve. So summarizing implications of the prisoner's dilemma is the first thing is the kinked demand curve which we looked at a few modules back. So the demand is kinked at the currently prevailing price and is elastic above this price and inelastic below.

So the demand is kinked at the currently prevailing price because here is the dilemma for the firms whether to change the price or not and we have seen that the firms they know that if they would like to increase the price the other firms are probably not going to follow suit in that case this particular firm is going to lose all its customers to the other firms.

Hence the demand curve is flat or highly elastic above this price. That is if the price is to be increased the laws of demand for this firm is going to be really huge but on the other hand if the firm is to reduce the price then it knows that probably it is not going to get a huge increase in output or a huge increase in demand for its product because other firms are also going to follow suit in this in reducing the price and hence the impact on quantity or the impact the output effect that we say that when there is a price decline the output is going to increase.

That does not happen and the firm kind of faces a inelastic demand curve below this price. So it is all but one thing which needs to be kept in mind is the firm faces this kinked demand curve because it perceives the actions of its rivals in this way. The firm perceives that the rivals are probably not, probably not going to increase the price if it increases the price and the other firms are probably going to reduce the price if the firm reduces its price.

So acting on this speculation the firm kind of faces a kinked demand curve. So this kinked demand curve results in a price rigidity. We have seen that the kinked demand curve has a marginal revenue curve which has a break in the in between. So it has a break where the kinked happens and in this break and in this range we have shown through diagram shown through theoretical modeling that if the marginal cost fluctuates within that range if the marginal cost is to go up in that range the firm is probably not going to increase its price.

So the firm is sticky or rigid about changing its price for a certain range of costs. It is probably going to take the cost on itself and not pass it on to the consumers for the fear that it is going to lose its consumers to the other firms. So this is called price rigidity which the producers are reluctant to change prices even if costs or demand changes.

Another 2 more things that can happen because of prisoner’s dilemma on pricing so since all the firms are acting with this prisoner’s dilemma in oligopolistic setup it is possible for the firms to go for tacit collusion. So that is possible and 2 examples are one is price signaling and other is called the price leadership. So basically as we have been repeatedly saying while discussing oligopoly that the oligopolistic firm keeps a watch on the price movements of its rivals.

But at the same time explicitly colluding with the firms and deciding on a monopoly output and monopoly price is not a proof by law. So they cannot do that and it is obviously not legally enforceable also. But there are situations where the firms signal to each other that I would so although the firms are firms fear the fear that they are going to lose consumers when the price when they increase the price yet they would like to signal to its to their to the other competitors in the market that I am going to increase the price and so do you?

So this is the kind of price signaling so the firms might feel that if I increase the price it is possible for the firms to increase their other firms to increase their price as well. So this is called price signaling where it is a implicit collusion where a firm initiates a price rise with the hope that the other firm will follow suit.

So this is a very common phenomena in a oligopolistic market structure and it happens it is a kind of tacit agreement and price signaling can happen in a lot of ways say for example in the airlines industry it may happen that one of the airlines is contemplating a rise in its prices in one of the routes and it raises the price but keeps a watch on the other competitors if they are following suit.

Now one possibility is that the other firms emboldened by the price rise of this one firm is by price rise of one of its competitors they also increase their price. So if they increase their price so the objective of the first firm increasing their increasing its price is fulfilled. Now what happens if the other firms do not increase their price?

If the other firms do not increase their price so usually what happens in case of the airlines industry they are going to try this price increase during the say weekend. So during the weekend when the fare fares are low they are going to try this and if they see that the other competitors in the market are not increasing their price they will immediately come back to the lower their price and come back to the original price.

Now then again in the following weekend it will again increase the price so that is a very clear signal to the competitors that you have to increase your price otherwise I may go for deep discounting and actually I may end up getting your customers. So this is the kind of price signaling which happens in the market but one thing that needs to be kept in mind here is price signaling is not always about illegal collusion or the firms going for monopoly pricing.

It could have a economic rationale behind it. Say for example this has been very citing the example of Professor George Hay of Institute of Competition Law where he says he cites the

example of 2 petrol pumps. Say imagine that there are 2 petrol pumps on a highway and there are no petrol pumps for miles altogether. So all the cars and vehicles which are passing through the highway they are dependent on only these 2 petrol pumps. So it is a oligopolistic market in this entire locality.

So for quite a few kilometers these are the 2 petrol pumps in the market, the only 2 petrol pumps in the market who are splitting the market between themselves. So now imagine that each of the petrol pumps is charging a price of say 68 Rs per litre of petrol.

Now one of the petrol pumps, now each of the firms they know, each of the petrol pumps obviously they are splitting the market they are in the same region same locality so their cost structures are also probably the same and they are just splitting the market between themselves. So may be the equal number of customers are almost going to each of the petrol pumps.

Now they know each of the firms each of the pumps they know that they could act as a monopoly if they would if they want to because in that entire area there is no other petrol pump and the all the cars are completely dependent on these two.

So one of the petrol pumps knows that it is possible to charge a price of 72 Rs per litre of petrol instead of 68 and it would really like to do so because it knows that if I increase the price to this much we can I can have monopoly profit and basically and if the other pump also follows the same price then both the firms together we are going to get a monopoly profit and we are going to split the number of customers equally amongst ourselves.

But there is no way it can communicate this directly to the other pump. That is illegal, it cannot do that. So what it does is it goes for price signaling in the market in the sense that it is going to increase its price on its own without making any without informing or sitting face to face with the other pump and deciding on the price it just takes the chance to increase its price.

Now is it not risky? Yes, it is risky for this firm for this pump say let us call this pump A. Now it is risky for pump A because as soon as it increases the price it will lose a whole lot of vehicles who will immediately go to pump B if pump B continues to charge 68 instead of 72 as the pump A is charging. So that is a huge risk that pump A is taking.

Now from the point of view of pump B it is very similar to the Pepsi and Coke example that we took. Now what are the choices in front of pump B? Now pump B knows that if it does not follow the rise in price by pump A so for a brief period probably for 5 days it is going to get the major of the vehicles on the highway.

But after that probably the other pump is going to go back to its lower price of 68, will continue to charge the lower price, will continue to charge the same price as pump B and they will go back to earning the profit that they were earning earlier. So and the other option to pump B is to since A has already raised its price let me also raise my price and it knows in that case it is going to get a monopoly profit which will be higher than the profit that it was earning earlier.

So in that case both A and B continue to earn a higher profit for all the periods to come. In the first case where pump B decides not to raise its price it earns a higher profit only for a very brief period. So in that case it makes sense for pump B to raise its price also and both the firms have been able to raise their price successfully and continue to earn a higher profit.

So this is where this is a form of price signaling where actually firm A or the petrol pump A has not communicated anything to the other pump, it has acted on its own, taken a chance taken a risk, acted on its own and the other pump just followed it. So this is a price signaling that can happen in the market.

Another form of tacit collusion is price leadership. Price leadership, one of the firms acts as the price leader and announces price changes and the other firms follow. So what happens in the case of a kinked demand curve we said that there is a range between in range where the firms are wary of changing the price although the costs may increase or the demand may have come down. So they are reluctant to increase the price.

So they fear increasing the price. But it is not always clear to the firms where exactly is the end of the kink or end of the break in the marginal revenue and where it is safe to increase the price and the other firms are going to increase the price. So in that case in a industry or in a market what usually happens is the firms basically follow a price leader.

They basically follow a price leader so if one of the firms has increased its price, so everyone follows suit because they know that the situations are such that it makes sense to increase the price and for one thing in case of price leadership in most circumstances the unless it is a very aggressive price leader or a very aggressive firm which has decided to cut prices to emerge as the dominant player in the market in most other situations the firms are going to increase the price only when the costs have increased or demand has gone down and which is going to probably affect the entire industry as a whole in the entire market as a whole and that is where one firm is going to take the initiative of increasing the price and the other firms basically follow.

So one typical example is in the case of the banks. Banks have this prime lending rate. A prime lending rate is the rate which the banks charge to their the most established biggest corporate clients. Now this prime lending rate is dependent on the money market in movements in the money market of the economy and is dependent on all the rates of interest, in the, all the rates of interest are basically correlated to this rate of interest in the in banking.

Now the banks again since they could oligopolistic banks few banks who are lending it is possible that they would be reluctant to change this lending, prime lending rate because they do not want to lose these big corporate customers. So there could be a price leader who understand understands the changes in the money market and knows that the rates are going to be high for some periods to come because of changes in the economy and it takes initiatives to increase this lending rate and all the other banks follow. So this is a example of price leadership.

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Price Leadership

- Dominant Price Leadership
- Barometric Price Leadership
- Aggressive Price Leadership

Now to talk a little more in details, price leadership can be of 3 types. One is the dominant price leadership. Now dominant price leadership happens when there is one single large firm in the market. It is a dominant player in the market and it basically it is almost like a monopoly may not be a monopoly but it is almost like a monopoly and it is a very big firm and since it is a big firm catering to it has economies of scale and probably since it is a big firm which has emerged as a dominant player it has better and more efficient cost conditions and it decides its prices on the basis of its own cost and demand in the market and the price that it charges since it is the dominant player in the market since it is a one large firm in this market and the price that it

charges the other firms just have to follow this price because it this big firm is catering to the major part of the market so the firm the price that this firm is charging the other smaller firms have to follow this price and adjust their output and output accordingly because the other firms are just catering to the residual demand in this market.

But this is a dominant price leadership and the price leader here almost acts as a monopoly and it does not is it is not concerned about the cost or demand conditions of the other smaller firms in the market. So it is almost acting like a monopoly and it is not behaving like a it probably does not have any prisoner's dilemma. So it is not going to consider the actions or reactions of the other firms in the industry and it is just going to change its price depending on its own cost conditions and demand and other firms are going to just follow suit and they are behaving like a oligopolistic like oligopolistic firm.

The second kind of price leadership is barometric price leadership. Now barometric price leadership can happen when there is a barometer firm. What do we mean by barometer firm? Basically this is a firm which probably gauges the changes in individual demand and cost first in the market. It is the first to understand changes in demand and cost conditions in the market and hence it basically changes the price and probably the other firms have accepted the role of this.

So this barometric price leadership this barometer firm may not be a dominant player in the firm. It may not a very large firm in the market yet it is possible for it to behave as the price leader because probably it has a history of judging the movements in the market, judging the movements of demand and cost in the market better than the other firms in the market and the other firms basically trust the price movement the price the price set by this firm and they also follow suit.

So barometric price leadership is another form of price leadership and third is the aggressive price leadership. Now in case of aggressive price leadership it is possible for a small firm, a small entrant in the market also to go for aggressive pricing that is it tries to establish its foothold in the market and accordingly it charges a very low price a competitive price and other firms are forced to follow it because otherwise their customers are going to be taken away by this very aggressive pricing policy of this firm.

So that is a aggressive price leadership which can also happen in a market. So these are the different ways in which pricing could be influenced in a oligopolistic market framework and some of it is allowed by law because they are going by their economic rational of setting a price

but collusion any explicit collusion amongst the firms to behave as a monopoly is not approved by law and that is something which the firms cannot do.

They cannot do this and that is the reason that basically collusion or Cartel formation they are intrinsically they are unsustainable. They cannot sustain for long because the firms do not trust each other and there they eventually at least one of the firms they it goes by self-interest and breaks the agreement which leads to breaking of the entire Cartel. Thank you.