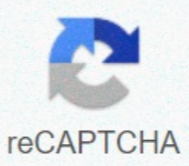I'm not robot

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What is a non collusive oligopoly

Let us learn about Non-Collusive and Collusive Oligopoly. Non-Collusive Oligopoly: Sweezy's Kinked Demand Curve Model: One of the important features of oligopoly market is price rigidity. And to explain the price rigidity in this market, conventional demand curve is not used. The idea of using a non-conventional demand curve to represent non-collusive oligopoly (i.e., where sellers compete with their rivals) was best explained by Paul Sweezy in 1939. Sweezy uses kinked demand curve to describe price rigidity in oligopoly market structure. The kink in the demand curve stems from the asymmetric behavioural pattern of sellers. If a seller increases the price of his product, the rival sellers will not follow him so that the first seller loses a considerable amount of sales. In other words, every price increase will go unnoticed by rivals. On the other hand, if one firm reduces the price of its product other firms will follow the first firm so that they must not lose customers. In other words, every price will be matched by an equivalent price cut. As a result, the benefit of price cut by the first firm will be inconsiderable. As a result of this behavioural pattern, the demand curve will be kinking market price. Suppose, the prevailing price of an oligopoly product in the market is QE or OP of Fig. 5.19. If one seller increases the price above OP, rival sellers will keep the prices of their products at OP. As a result of high price charged by the firm, buyers will shift to products of other sellers who have kept their prices at the old level. Consequently, sales of the first seller will drop considerably. That is why demand curve in this zone (dE) is relatively elastic. On the other hand, if a seller reduces the price of his product below QE, others will follow him so that demand for their products does not decline. Thus, demand curve in this region (i.e., ED) is relatively inelastic. This behavioural pattern thus explains why prices are inflexible in the oligopoly market — even if demand and costs change. The kink in the demand curve at point E results in a discontinuous MR curve. The MR curve has two segments : At output less than OQ the MR curve (i.e., dA) will correspond to DE portion of AR curve, and, for output larger than OQ, the MR curve (i.e., BMR) will correspond to the demand curve ED. Thus, discontinuity in MR curve occurs between points A and B. In other words, between these two points, MR curve is vertical. Equilibrium is achieved when MC curve passes through the discontinuous portion of the MR curve. Thus the equilibrium output is OQ, to be sold at a price OP. Suppose, now as a result, MC curve will shift up from MC1 to MC2. The resulting price and output remain unchanged at OP and OQ, respectively. This fact explains stickiness of prices. In other words, in oligopolistic industries price is more stable than costs. At first sight, the model seems to be attractive since it explains the behaviour of firms realistically. But the model has certain limitations. Firstly, it does not explain how the ruling price is determined. It explains that the average price is at the ruling price. In this sense, it is not a theory of pricing. Secondly, price rigidity conclusion is not always tenable. Empirical evidence suggests that higher costs force a further price rise above the kink. Despite these limitations, the model is popular among textbook authors. Collusive Oligopoly Model: Price Leadership Model: Non-collusive oligopoly model (Sweezy's model) presented in the earlier section is based on the assumption that oligopoly firms act independently even though firms are interdependent in the market. A vigorous price competition may result in uncertainty. The question that arises now is: how do oligopoly firms remove uncertainty? In fact, firms enter into pricing agreements with each other instead of adopting competition or price war with each other. Such agreement—both explicitly (or formal) and implicit (or informal)—may be called collusion. Always, every firm has the inclination to achieve more strength and power over the rival firms. As a result, in the oligopoly industry, one finds the emergence of a few powerful competitors who cannot be eliminated easily by other powerful firms. Under the circumstance, some of these firms act together or collude with each other to reap maximum advantage. In fact, in oligopolist industry, there is a natural tendency for collusion. The most important form of collusion are: price leadership cartel and merger and acquisition. When a formal collusive agreement becomes difficult to launch, oligopolists sometimes operate on informal tacit collusive agreements. One of the most common form of informal collusion is price leadership. Price leadership arises when one firm—may be a large as well as dominant firm—initiates price changes while other firms follow. An example of dominant firm price leadership is shown in Fig. 5.20 where DT is the industry demand curve. Since small firms follow the leader—the dominant firm—they behave as "price-takers". MCs is the horizontal summation of the MC curves of all small firms. Suppose, the dominant firm sets the price at OP1 (where DT and MCs intersect each other at point C). The small firms meet the entire demand P1C at the price OP1. Thus, the dominant firm has nothing to sell in the market. At a price OP3, the small firm will supply nothing. It is obvious that price will be set in between OP1 and OP3 by the leader. The demand curve faced by the leader firm of the oligopoly industry is determined for any price—it is the horizontal distance between industry demand curve, DT, and the marginal cost curves of all small firms, MCS. In Fig. 5.20, DL is the leader's demand curve and the corresponding MR curve is MRL. Being a leader in the industry, the dominant firm's supply curve is represented by the MCL curve. Since it enjoys a cost advantage, its MC curve lies below the MCS curve. A dominant firm maximizes profit at point E where its MCL and MRL intersect each other. The corresponding output of the price leader is OQL. Price thus determined is OP2. Small firms accept this price OP2 and sell QLQT (=AB) amount — industry demand the OQT output. In actual practice, the analysis of price leadership is complicated, particularly when new firms enter the industry and try to become the leader or dominant. Collusive Oligopoly—Merger and Acquisition: Another method to remove price war among oligopoly firms is merger. Merger may be defined as the consolidation of two or more independent firms under single ownership. When a firm purchases assets of another firm, acquisition takes place. Merger and acquisition take place because the management comes to a conclusion that a consolidated firm is powerful than the sum of individual firms. Since basically the difference between cartel and merger is a legal one, we won't consider mergers and acquisitions. The marginalistic principle applied in the case of profit maximizing cartel is also applicable in the case of merger. Conclusion: Can we make some definite conclusions from the oligopolistic market structure? Though one can make unambiguous predictions about perfect competition as well as monopoly, no such predictive element of an oligopolistic competition exists. It is, thus, a perplexing market structure. One important characteristic of an oligopoly market is interdependence among sellers. Each seller's price-output decision is influenced by the perceptions of countermoves of rival sellers. Given the large number of possible reactions, we come up with different models based on different assumptions about the behaviour of the rival sellers, the extent and form of exit and entry, the likelihood of collusion between firms. 'Unfortunately, economic theory does not suggest which assumptions to use. In any event, each of these theories must ultimately stand or fall on its predictive powers'. Competition law Basic concepts History of competition law Monopoly and oligopoly Coercive monopoly Natural monopoly Barriers to entry Herfindahl–Hirschman Index Market concentration Market power SSNIP test Relevant market Merger control Anti-competitive practices Monopolization Collusion Formation of cartels Price fixing (cases) Bid rigging Tacit collusion Product bundling and tying Refusal to deal Group boycott Essential facilities Exclusive dealing Dividing territories Predatory pricing Misuse of patents and copyrights Enforcement authorities and organizations International Competition Network List of competition regulators vte An oligopoly (from Greek ὀλίγος, oligos "few" and πωλεῖν, polein "to sell") is a market form wherein a market is dominated by a small group of large sellers (oligopolists). For example, it has been found out that electrical and tobacco industry are highly oligopolist in the US.[1] Oligopolies can result from various forms of collusion that reduce market competition which then leads to higher prices for consumers and lower wages for the employees of oligopolies. Under this situation, oligopolists act like a monopoly and ultimately gain a market power. While they still can choose to compete hard instead of colluding together and ending up with a scenario where is similar to perfect competition.[2] Oligopolists have their own market structure.[3] With few sellers, each oligopolist is likely to be aware of the actions of the others. According to game theory, the decisions of one firm therefore influence and are influenced by decisions of other firms. Strategic planning by oligopolists needs to take into account the likely responses of the other market participants. Entry barriers include high investment requirements, strong consumer loyalty for existing brands and economies of scale and these barriers effectively facilitate the formation and sustainability of collusion. The fundamental reason is related to future retaliation (deviation). In other words, firms will lose less for deviation and thus have more incentive to undercut collusion price (obtain short-term deviated profit) when future entry continues.[4] There are other factors that could also facilitate collusion such as bring negative impacts since it ends up with less choices and high prices for customers.[6] Another difference between oligopoly and perfect competition is that oligopolists do not have a supply curve. Instead, they search for the best price-output combination.[7] one few sellers monopoly oligopoly buyers monopsony oligopsony Description Oligopoly is a common market form where only a limited number of firms are in competition on the supply side. As a quantitative description of oligopoly, the four-firm concentration ratio is often utilised and is the most preferable ratio for analysing market concentration.[8]This measure expresses, as a percentage, the market share of the four largest firms in any particular industry. For example, as of fourth quarter 2008, if we combine total market share of Verizon Wireless, AT&T, Sprint, and T-Mobile, we see that these firms, together, control 97% of the U.S. cellular telephone market.[9] These four cellular telephone firms have become the top-tier in US carriers and were protected by the US government that acted as an intervention for other firms entering the market.[10] Oligopolistic competition can give rise to both wide-ranging and diverse outcomes. In some situations, particular companies may employ restrictive trade practices (collusion, market sharing etc.) in order to inflate prices and restrict production in much the same way that a monopoly does. Whenever there is a formal agreement for such collusion, between companies that usually compete with one another, this practice is known as a cartel. A prime example of such a cartel is OPEC, where oligopolistic countries manipulate the worldwide oil supply and ultimately leaves a profound influence on the international price of oil.[11] There are legal restrictions on such collusion in most countries and relevant regulations or enforcements against cartels (anti-competitive behaviours)enacted since the late of 1990s.[12]For example, EU competition law has prohibited some unreasonable anti-competitive practices such as directly or indirectly fix selling prices, manipulate market supply or control trade among competitors etc, either by means of formal contracts or oral agreements.[13] In US, Antitrust Division of the Justice Department and Federal Trade Commission are created for banning collusion on cartels.[14]However, there does not have to be a formal agreement for collusion to take place, which called tacit collusion that less competitive outcome is achieved through mutual understanding among firms (although for the act to be illegal there must be actual and direct communication between companies)–for example, in some industries there may be an acknowledged market leader which informally sets prices to which other producers respond, known as price leadership.[15] Within the development of anti-trust law on most countries that tacit collusion is becoming more popular.[16] In other situations, competition between sellers in an oligopoly can be fierce, with relatively low prices and high production. This could lead to an efficient outcome approaching perfect competition. The competition in an oligopoly can be greater when there are more competitors in an industry. Theoretically, it is harder to sustain cartels (anti-competitive behaviours) in an industry with a larger number of firms in that it will yield less collusive profit for each firm.[17] Consequently, existing firms may have more incentive to deviate. However, this conclusion is a bit more intuitive and empirical evidence has showed this conclusion or relationship is a bit more ambitious and mixed.[18] Thus the welfare analysis of oligopolies is sensitive to the parameter values used to define the market's structure. In particular, the level of dead weight loss is hard to measure. The study of product differentiation indicates that oligopolies might also create excessive levels of differentiation in order to stifle competition, as they might also gain certain marker power by offering somewhat differentiated products.[19] Oligopoly theory makes heavy use of game theory to model the behavior of oligopolies: Stackelberg's duopoly. In this model, the firms move sequentially (see Stackelberg competition). Cournot's duopoly. In this model, the firms simultaneously choose quantities (see Cournot competition). Bertrand's oligopoly. In this model, the firms simultaneously choose prices (see Bertrand competition). When compared with Cournot and Bertrand model, it can be seen that price competition is more aggressive and competitive, and also it is easier to sustain collusion under price competition.[20] Characteristics Profit maximization conditions An oligopoly maximizes profits. Ability to set price Oligopolies are price setters rather than price takers.[21] Entry and exit Barriers to entry are high.[22] The most important barriers are government licenses, economies of scale, patents, access to expensive and complex technology, and strategic actions by incumbent firms designed to discourage or destroy nascent firms. Additional sources of barriers to entry often result from government regulation favoring existing firms making it difficult for new firms to enter the market.[23] Number of firms "Few" – a "handful" of sellers.[22] There are so few firms that the actions of one firm can influence the actions of the other firms.[24] Long run profits Oligopolies can retain long run abnormal profits. High barriers of entry prevent sideline firms from entering market to capture excess profits. Product differentiation Product may be homogeneous (steel) or differentiated (automobiles).[23] Perfect knowledge Assumptions about perfect knowledge vary but the knowledge of various economic factors can be generally described as selective. Oligopolies have perfect knowledge of their own cost and demand functions, but their inter-firm information may be incomplete. Buyers have only imperfect knowledge as to price,[22] cost and product quality. Interdependence The distinctive feature of an oligopoly is interdependence.[25] Oligopolies are typically composed of a few large firms. Each firm is so large that its actions affect market conditions. Therefore, the competing firms will be aware of a firm's market actions and will respond appropriately. This means that in contemplating a market action, a firm must take into consideration the possible reactions of all competing firms and the firms' countermoves.[26] It is very much like a game of chess, in which a player must anticipate a whole sequence of moves and countermoves in order to determine how to achieve his or her objectives; this is known as game theory. For example, an oligopoly considering a price reduction may wish to estimate the likelihood that competing firms would also lower their prices for retaliation and possibly trigger a ruinous price war. Or if the firm is considering a price increase, it may want to know whether other firms will also increase prices or hold existing prices constant. This anticipation leads to price rigidity, as firms will only be willing to adjust their prices and quantity of output in accordance with a "price leader" in the market. An example for this interdependence among oligopolist such that Texaco needs to take into consideration whether its own price cut will trigger Shell's incentive to match, and so that the benefit or privilege gained by low price would be eliminated.[27]This high degree of interdependence and competition among oligopoly firms may have a strong incentive to engage in collusion and possibly forms a cartel. Hence, the market share originally gained by having dropped the price will be minimised or eliminated. This is why on the kinked demand curve model the lower the segment of the demand curve is inelastic. As a result, in such markets price rigidity prevails. Modeling There is no single model describing the operation of an oligopoly market.[26] The variety and complexity of the models exist because you can have two to 10 firms competing on the basis of price, quantity, technological innovations, marketing, and reputation. However, there are a series of simplified models that attempt to describe market behavior by considering certain circumstances. Some of the better-known models are the dominant firm model, the Cournot–Nash model, the Bertrand model and the kinked demand model. Cournot–Nash model Main article: Cournot competition The Cournot–Nash model is the simplest oligopoly model. The model assumes that there are two "equally positioned firms"; the firms compete on the basis of quantity rather than price and each firm makes an "output of decision assuming that the other firm's behavior is fixed."[35] The market demand curve is assumed to be linear and marginal costs are constant. To find the Nash equilibrium one determines how each firm reacts to a change in the output of the other firm. The path to equilibrium is a series of actions and reactions. The pattern continues until a point is reached where neither firm desires "to change what it is doing, given how it believes the other firm will react to any change."[36] The equilibrium is the intersection of the two firm's reaction functions. The reaction function shows how one firm reacts to the quantity choice of the other firm.[37] For example, assume that the firm 1's demand function is P = (M − Q2) − Q1 where Q2 is the quantity produced by the other firm and Q1 is the amount produced by firm 1.[38] and M=60 is the market. Assume that marginal cost is CM=12. Firm 1 wants to know its maximizing quantity and price. Firm 1 begins the process by following the profit maximization rule of equating marginal revenue to marginal costs. Firm 1's total revenue function is RT = Q1 P = Q1(M − Q2 − Q1) = MQ1 − Q1 Q2 − Q12. The marginal revenue function is R M = ∂ R T ∂ Q 1 = M − Q 2 − 2 Q 1 {\displaystyle R_{M}=\frac {\partial R_{T}}{\partial Q_{1}}}=M-Q_{2}-2Q_{1}.[note 1] RM = CM M − Q2 − 2Q1 = M − CM) − Q2 1/2 = (M − CM/2 − Q22/2 = 24 − 0.5 Q2 [1,1] Q2 = 2(M − CM/) − 2Q1 = 96 − 2 Q1 [1,2] Equation 1.1 is the reaction function for firm 1. Equation 1.2 is the reaction function for firm 2. To determine the Nash equilibrium you can solve the equations simultaneously. The equilibrium quantities can also be determined graphically. The equilibrium solution would be at the intersection of the two reaction functions. Note that if you graph the functions the axes represent quantities.[39] The reaction functions are not necessarily symmetric.[40] The firms may face differing cost functions in which case the reaction functions would not be identical nor would the equilibrium quantities. Bertrand model Main article: Bertrand competition The Bertrand model is essentially the Cournot–Nash model except the strategic variable is price rather than quantity.[41] The model assumptions are: There are two firms in the market They produce a homogeneous product They produce at a constant marginal cost Firms choose prices PA and PB simultaneously Firms outputs are perfect substitutes Sales are split evenly if PA = PB[42] The only Nash equilibrium is PA = PB = MC. Neither firm has any reason to change strategy. If the firm raises prices it will lose all its customers. If the firm lowers price P < MC then it will be losing money on every unit sold.[43] The Bertrand equilibrium is the same as the competitive result.[44] Each firm will produce where P = marginal costs and there will be zero profits.[41] A generalization of the Bertrand model is the Bertrand–Edgeworth model that allows for capacity constraints and more general cost function. Oligopolistic market Kinked demand curve model Main article: Kinked demand According to this model, each firm faces a demand curve kinked at the existing price.[45] The conjectural assumptions of the model are; if the firm raises its price above the current price, competitors will not follow and the acting firm will lose market share and second if a firm lowers prices below the existing price then their competitors will follow to retain their market share and the firm's output will increase only marginally.[46] In other words, oligopolist's pricing logic is that competitors will match price cut - retaliating to obtain more market share, while they will stick with the current or initial price for any price rising among competitors.[47] If the assumptions hold then: The firm's marginal revenue curve is discontinuous (or rather, not differentiable), and has a gap at the kink[45] For prices above the prevailing price the curve is relatively elastic[48] For prices below the point the curve is relatively inelastic[48] The gap in the marginal revenue curve means that marginal costs can fluctuate without changing equilibrium price and quantity.[45] Thus prices tend to be rigid. Examples Many industries have been cited as oligopolistic, including civil aviation,[49] agricultural pesticides,[49] electricity,[50][51] and platinum group metal mining.[52] In most countries, the telecommunications sector is characterized by an oligopolistic market structure.[53][53] Rail freight markets in the European Union have an oligopolistic structure.[54] In the United States, industries that have identified as oligopolistic include food processing,[55] funeral services,[56] sugar refining,[57] beer,[58] pulp and paper,[59] , automobiles[60] Market power and market concentration can be estimated or quantified using several different tools and measurements, including the Lerner index, stochastic frontier analysis, and New Empirical Industrial Organization (NEIO) modeling,[55] as well as the Herfindahl-Hirschman index.[52] Demand curve Above the kink, demand is relatively elastic because all other firms' prices remain unchanged. Below the kink, demand is relatively inelastic because all other firms will introduce a similar price cut, eventually leading to a price war. Therefore, the best option for the oligopolist is to produce at point E which is the equilibrium point and the kink point. "Kinked" demand curves are similar to traditional demand curves, as they are downward-sloping. They are distinguished by a hypothesized convex bend with a discontinuity at the bend–"kink". Thus the first derivative at that point is undefined and leads to a jump discontinuity in the marginal revenue curve. Classical economic theory assumes that a profit-maximizing producer with some market power (either due to oligopoly or monopolistic competition) will set marginal costs equal to marginal revenue. This idea can be envisioned graphically by the intersection of an upward-sloping marginal cost curve and a downward-sloping marginal revenue curve (because the more one sells, the lower the price must be, so the less a producer earns per unit). In classical theory, any change in the marginal cost structure (how much it costs to make each additional unit) or the marginal revenue structure (how much people will pay for each additional unit) will be immediately reflected in a new price and/or quantity sold of the item. This result does not occur if a "kink" exists. Because of this jump discontinuity in the marginal revenue curve, marginal costs could change without necessarily changing the price or quantity. The motivation behind this kink is the idea that in an oligopolistic or monopolistically competitive market, firms will not raise their prices because even a small price increase will lose many customers. This is because competitors will generally ignore price increases, with the hope of gaining a larger market share as a result of now having comparatively lower prices (price rigidity). However, even a large price decrease will gain only a few customers because such an action will begin a price war with other firms. The curve is, therefore, more price-elastic for price increases and less so for price decreases. Theory predicts that firms will enter the industry in the long run since reward prices for oligopolists is more stable or 'focal' in the long run under this kinked demand curve situation.[61] See also Big business Conjectural variation Market failure Monopoly Monopsony Perfect competition Prisoner's dilemma Simulations and games in economics education Swing producer Unfair competition Notes ^ RM = M − Q2 − 2Q1 References ^ Appelbaum, Elie (1 August 1982). "The estimation of the degree of oligopoly power". 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