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Building a Win-Win Strategy Using Game Theory in a Competitive Environment (Subject to Antitrust Restrictions)

Bella Horita*

Eindhoven University of Technology
NL-5612 AJ, De Zaale, Eindhoven, Noord-Brabant, Netherlands

Abstract. The modern economic space is characterised by the actualisation of such market structure as an oligopoly, which necessitates its proper theoretical and empirical investigation. The aim of the paper is to analyse the use of game theory in the oligopoly market under the said conditions. The theoretical methods are the main scientific methods used in this study, in particular analysis, synthesis, historical and statistical methods. It was determined that the game theory is one of the most important relatively new mathematical theories applied in developing various types of economic models, including market analysis and companies activity strategy formation. It has been confirmed that the game theory is most often applied to oligopoly market analysis i.e. the market in which two or more big players conduct activities. Their decisions influence both the market in general and other "players" income and position in the market by influencing the output price or the volume of output (depending on the model). It is stated that there are many ways to apply game theory as the main theory and to explain the future state of the market, incomes, losses, and producers' share in the oligopoly market due to different conditions and variables. This paper has reviewed the use of game theory subject to antitrust restrictions and when oligopolistic companies mutually benefit. It was substantiated that quite often in the models generated by economists, the mutual benefit of companies in an oligopoly market implies the existence of collusion between market participants in which companies benefit more than they would under the condition of competition between them (cartel). The practical value of the paper is in the theoretical substantiation of game theories in markets in general and in providing some practical strategies for companies' operations in markets, which will also be useful for students in their studies and for other scholars of economic disciplines

Keywords: oligopoly, game theory, market analysis, antitrust policy, cartel

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*Corresponding author

Introduction

In today's global economy, an oligopoly is a frequent type of market structure. Such markets may be cement, oil, gas, cars, non-ferrous or ferrous metals, drinks, etc. This is due to growing concentration in markets, increasing margins, decreasing labour shares, and bigger dominance of large companies in markets and in the world economy as a whole [1]. Although such a process of market evolution within the development of the world economy has its disadvantages (higher product prices and lower output), it is inevitable for many reasons, primarily for the high cost of companies research, which would be impossible in a competitive market due to the small size of companies in it. It is important to note that competition in an oligopoly market is an open question. Some economists consider this market closer to a competitive one because there are several actors in it, while others equate it with a monopoly. A "price competition" that should be in this market is only superficially visible but doesn't exist in reality. Thus, the analysis of oligopoly markets is still important in science.

The oligopoly market analysis is based on game theory, which is a branch of applied mathematics that provides tools for analysing situations in which entrepreneurs (monopolists), called players, make interdependent decisions [2]. It allows economists to predict the behaviour of a company in a number of given scenarios. It explains why companies collude and why they might refuse. It indeed helps economists to find a fair price and sales volume in an oligopoly market under one or another scenario [3]. This is a peculiarity of oligopoly market analysis from other markets. However, this is not the only possibility of its application in economics: today, game theory is also used in the analysis of international negotiations, modification of multilateral regimes, and decision-making in international organisations [4].

In its essence, competition is a struggle between economic actors for the most efficient use of production factors [5]. Its absence is one of the main reasons for the failure of the market mechanism [6]. Therefore, in oligopolistic and monopolistic markets, antitrust policy is used to maintain their greater efficiency. However, its application has always been a difficult task in the oligopoly market due to its structure and nature: this market is monopolised on the one hand and competitive on the other. In addition, each oligopoly market has its own characteristics that affect the character of market players [7]. For example, in the gasoline market, which is a typical oligopoly market, products are fungible and demand is inflexible. At the same time, in the car market, products are similar (but not homogeneous) and demand is less persistent, which changes the rules of the game on the market, and therefore the methods of anti-monopoly policy should change. Nevertheless, the main methods of anti-monopoly policy remain: level limit of monopoly in the market, state monitoring of monopoly and competition, price monitoring (prohibition of monopoly prices), and supporting the preservation of competition in the market [8].

Thus, the relevance of the paper is in the analysis of the oligopoly market that is prevalent in the world economy. The article aims to model an action strategy of entrepreneurs ("players") in the competitive oligopoly market, under antitrust restrictions. With the help of the model, it will be possible to better understand the actions of the monopolist in the conditions of antitrust restrictions and thus to improve the national antitrust legislation. The object of the research is an oligopoly as a basic unit in the market and its actions in the established conditions to profit the most. The novelty of the article lies in the fact that recently in the economic literature little attention has been paid to the study of oligopolies, especially in the conditions of antitrust restrictions.

Materials and Methods

The purpose of the study is to show how game theory can be used in the analysis of an oligopoly market subject to antitrust restrictions. This implies that the main methods used in the article are theoretical methods. First and foremost – analytical research methods, as a great number of different sources were analysed in the course of writing the article: from articles by foreign and domestic authors to various reports, documents, and other publications. Statistical or empirical data was used to a lesser extent due to the peculiarities of this work. In addition, the author applied the historical method to determine the formation of the oligopoly market in a historical retrospective. Analysis and synthesis were applied to process the theoretical framework of the study, in particular, to characterise the behaviour of monopoly companies in the market according to three types of state intervention: the first is administrative regulation, i.e. banning companies in certain activities, aimed mainly at reducing competition in the market; the second is price regulation, i.e. setting the boundaries in the market to form the price of products by monopolistic companies; the third is the establishment of the maximum market share that monopolists are allowed to occupy; forecasting to highlight the prospects for future development of the International Standards on Auditing. At last, generalisation was applied to summarise the work and the statistical method to process quantitative data.

The study used models that help to better describe the actions of monopolists in the market under antitrust restrictions. Mainly the Bertrand model is used in the study as the author concluded that the situation in which market players find themselves under antimonopoly restrictions in the market, in particular, limited the possibility to change output volumes, and the possibility to manipulate the market by means of price changes only, best fits the conditions set out in the Bertrand model. Other models (in particular, Cournot and Stackelberg) are also mentioned in the paper, but they do not describe so accurately the market situation under restrictions on monopolists as this model does.

The research on the chosen topic consisted of two parts. The first stage involved analysis of the specifics of

conducting anti-monopoly policy and how exactly it affects markets and monopolists from a theoretical point of view. The forming theoretical aspects of the subsequent part of the study, including a description of existing models for analysing oligopoly markets, description of game types, and the popular "prisoner's dilemma" and its interpretation in the oligopoly market were provided for in the first part as well. The second stage was devoted to describing the most successful strategies for monopolists in an oligopoly market whenever possible with a combination of the three main types of anti-monopoly policies. The state of new companies that entered the market due to the introduction of anti-monopoly restrictions in the market is also described in the second stage. Also, models of the monopolists behaviour in the oligopoly market are constructed and their profits and market shares as a function of their behaviour are described.

Results and Discussion

At its core, antimonopoly legislation is a complex branch of legislation that includes the norms of civil, administrative, criminal, and some other branches of law [9]. Its main task is to review cases of monopoly power in monopoly and oligopoly markets and, depending on the situation, apply certain measures to limit the powers of a company or several companies in the market. Most often, the committee's actions take the form of market price regulation, various kinds of administrative prohibitions or sanctions for a monopoly company regarding actions that could prevent competition in the market (e.g. buying other companies), etc. However, there is no single blueprint for a committee to regulate monopolised markets. Moreover, the rights and powers of anti-monopoly committees can vary greatly from country to country, so it is important to familiarise with them before analysing an oligopoly market.

In fact, there are several kinds of "games", each with its own characteristics: the normal format of games, which is divided into two: zero-sum games (in which the amount a player loses is equal to the amount another player wins) and non-zero-sum games (in which the sum of both players' wins is not necessarily 0); extensive-form game (those in which players have many possible solutions, decision trees) are also divided into two kinds: perfect information (where players are aware of past choices) and imperfect information (players are not fully aware of past choices); characteristic form games where players can create alliances, coalitions, and partnerships [10]. In addition, the basic models of oligopoly markets in economics could be considered: the Cournot model where each company models its output and on the basis of this output the price therefore forms; the Bertrand model where companies produce a single demand in the market which is met by companies and there is only change in price and hence so-called "price war"; Hunt and Morgan theory which assumes that demand is not homogenous and dynamic and also that consumers have imperfect information about products so that the aim of companies in the market is to achieve maximum productivity; the Stackelberg model due to which there is a leader company that determines output and product prices, when the company which is watching, can decide whether or not to accept an output imposed by the leader company. Stackelberg model can also be divided into two: a producer model in which the producer is the leader and determines the price in response to the retailers and competitors; and a retailer model in which the seller is the leader and the producer is his follower.

Another simple and fundamental model in game theory is the Prisoners' Dilemma [11]. It depicts a conflict of interest where each player influences the course of events and obtains information about the possible gains and losses from the game. However, in the course of this conflict, actions aimed to maximise self-interest leads to a worse outcome than that which could have been obtained from behaviour that wouldn't match the maximisation of given interests. In the original version, the dilemma is as follows (Table 1).

Table 1. Tabular interpretation of the prisoner's dilemma

		Prisoner 1	
		Cooperation	Refusal
Prisoner 2	Cooperation	5; 5	0; 10
	Refusal	10; 0	1; 1

Source: compilled by the author based on [12]

In the terms of this dilemma, both prisoners have 2 options: deny the crime or cooperate with the police and turn in their partner, who is sitting in a different cell. The prisoners have no opportunity to know about each other's actions. The numbers in the table indicate the number of years prisoners will have to stay in prison if they cooperate (with the police) or refuse to cooperate. In case of mutual refusal both will get 1 year, in case of mutual cooperation, they will get 5 years, in case of one of them refusing and the other cooperating the one who refused will get 10 years and the other one will not go to prison.

The most favourable course of action for both parties is to refuse to cooperate with the police, as they would then only receive 1 year of imprisonment each. However, there is a risk for each prisoner to receive 10 years imprisonment if the other prisoner cooperates. This becomes possible because in this case, the prisoner who cooperates gets the opportunity not to go to prison at all (gets the highest benefit for himself/herself) and also that they are guaranteed not to spend 10 years in prison. Thus, the rational behaviour (i.e. the behaviour that will lead to the best benefit and risk reduction) is to cooperate with the police, even though it may

not lead to the most beneficial outcome for both parties. This dilemma can be interpreted for an oligopoly market because in this market there is a possibility of collusion situation between monopolists, or the creation of a cartel [13]. This interpretation is demonstrated in Table 2 below; the values written in the table are the revenues of the respective monopolists.

Table 2. Tabular interpretation of the prisoner's dilemma for the "players" (participants) in an oligopoly market

		Monopolist 1	
		Involvement in collusion	Betrayal
Monopolist 2	Involvement in collusion	100; 100	0; 150
	Betrayal	150; 0	50; 50

Source: author's devising

Table 2 shows that the most profitable option for both companies is to participate in the collusion, i.e. to create a cartel. However, there is a temptation for market players to break the agreement (betrayal), namely, to reduce the monopoly price presented during the collusion, which will lead to super profits for one of the companies (by increasing demand for one company's products and decreasing the other's). In this case, the company that is still in collusion will be forced to reduce prices following the first, which will reduce both firms' profits (in Table 2 from level 100; 100 to level 50; 50). Figure 1 shows the same situation using a graphical model.

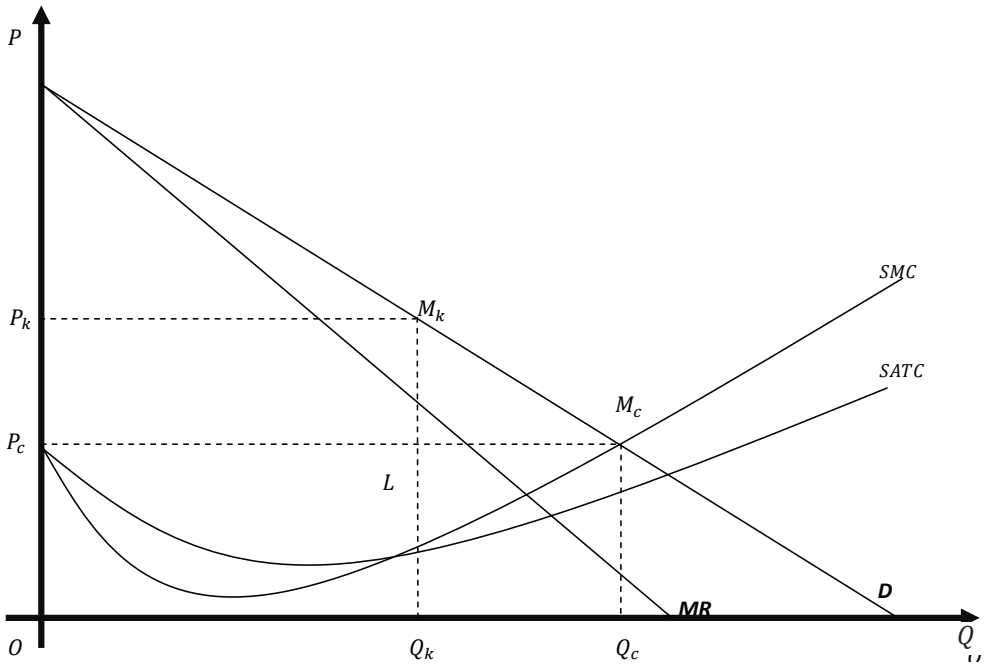

Figure 1. Graphical interpretation of the prisoner's dilemma

Source: author's devising

In Figure 1: P is price, Q is output, *SMC* is the short-run marginal cost curve, *SATC* is the average short-run cost curve, D is the demand curve, *MR* is the marginal revenue curve, P_k, Q_k – price and demand when establishing a cartel, P_c, Q_c – price and demand when both companies compete. Thus, it is more profitable for both companies to output at a price P_k because the area of the Graph $P_k M_k Q_k O$ is larger than the area of the Graph $P_c M_c Q_c O$. However, at any time one of the market players may reduce the price to obtain additional profits from increased demand, which in time will reduce the price to the level of P_c and thus reduce the profits of each of the market participants by $S_{P_k O Q_k M_k} - S_{P_c O Q_c M_c}$ or $S_{P_k P_c L M_k} - S_{L Q_k Q_c M_c}$.

It is now appropriate to consider how monopolists would behave under antitrust restrictions. Since there may be several types of restrictions and they may be combined in various ways, several options for the behaviour of companies in the market should be considered. Let us review the first situation: in an oligopoly market (with a cartel), price limits were established with the maximum price in the market set below the price set by the cartel. In this case, the most likely outcome is that the price is set at the highest level allowed by the government. When fundamental differences between the companies' objectives as well as their intentions occur, it is possible to break the agreement and set the price at the level:

$$P = SMC = c \quad (1)$$

If companies have been prohibited from monopolistic activities, associated in particular with buying out companies, price and market share limits have been set, then new players may emerge in the market. Namely, if in an oligopoly market with undifferentiated products two companies with equal market shares were in a cartel with a set monopoly price at a level:

$$P_m = \frac{a + c}{2} \quad (2)$$

where a is the coefficient in the "price-sales" equation:

$$P(Q) = a - bQ \quad (3)$$

c is the marginal (and average) cost:

$$MC_i = AC_i = c \quad (4)$$

The government sets limits on the price in the market at a level:

$$[P_i; P^*], P_m > P_i, P_m > P^* \quad (5)$$

where, P_i – is the maximum price of a product in the market; P^* – is the equilibrium price in the market when new firms enter the market; equal to the *SMC* (short-run average cost) for small companies.

Due to the facilitation of entry into the market, related to the impossibility, from the legal point of view, for companies to apply certain actions that impede free competition, the number of companies n has the opportunity to enter the market by reducing the price of the product from the level of P_m to the level of P^*. The only way out in this situation is for the companies to reduce the price as quickly as possible (in the Bertrand model, in which companies influence the market equilibrium primarily through price rather than "thrown goods" [14]) or to increase the quantity of output (in Cournot model, in which companies influence prices through a quantity of products placing on the market [15]) to a level P^* to avoid companies entering the market and taking market share. If, however, monopolists keep the price at the maximum level allowed by the government, this will create an incentive for new companies to enter the market, take over some of the market sales, and gradually reduce the price due to the increase in the number of products on the market. In fact, monopolists may make new cartel agreements with these companies as well, keeping the price high, but over time there will be so many that it will become impossible to maintain the cartel, leading to a price reduction towards the equilibrium level P^*. Once the price reaches this level and the small companies have gained a large market share, it will be impossible for monopolists to raise prices to achieve monopolistic profits because of the broken demand curve in a monopoly market, that is, the rigidity of prices. At this point it is impossible for companies to raise prices independently in an oligopoly market without suffering losses; this also indicates asymmetries in rival responses to price changes: if one market player raises prices, others are not likely to follow, as the current level brings more profit if there is a high demand for the product. The model of this curve in an oligopoly market is as follows (Fig. 2).

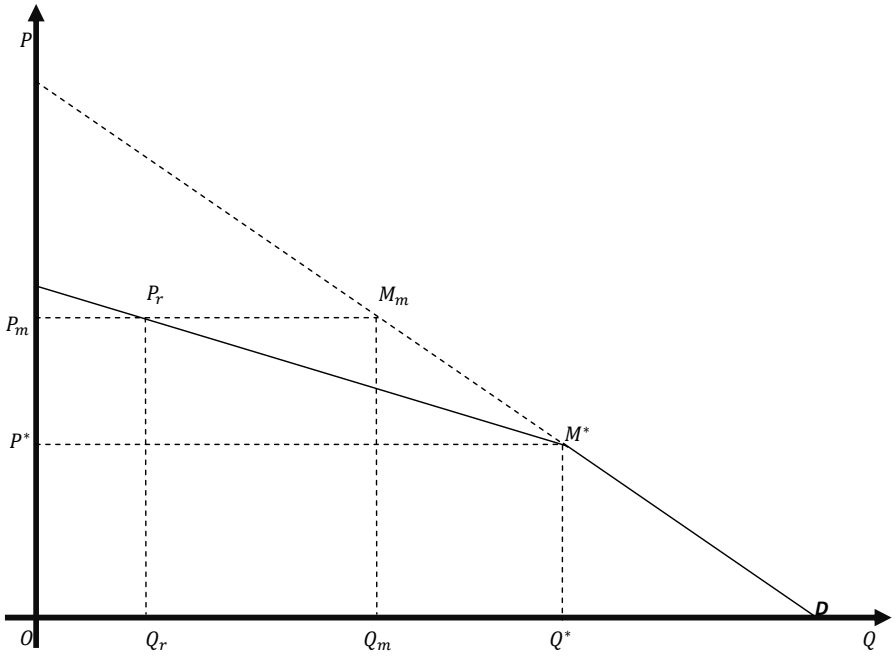

Figure 2. Model of a broken demand curve in an oligopoly market

Source: author's devising

Figure 2 demonstrates that at the point where the market is now (M^*), there is a break in the demand curve which is caused, as mentioned above, by an asymmetry in the activity of market players. Thus, if one of the market players sets a monopoly price P_m he or she will not be able to produce quantities of Q_m, but only to the extent of Q_r. As the result, the monopolist's income is $S_{P_m P_r Q_r O}$ instead of $S_{P_m M_m Q_m O}$ and is lower as well. Thus, once the price has been reduced in an oligopoly market and many other companies have been allowed to enter it, it is not possible to return to the previous price level, nor is it possible to create a cartel in that market. The most appropriate strategy is for both companies to reduce the price level to P^*. However, this should be done while in the cartel, because if these conditions are violated and if the government permits in the future, the price may fall below the marginal short-run costs of small companies in the market due to continued competition between the companies, resulting in zero profit for the monopolists. The existence of profits even when the price P^* is reached in the market is due to economies of scale, which are manifested in large output volumes of the company and, consequently, its lower long-run (and short-run) average costs [17].

In addition, when anti-monopoly restrictions are imposed on a market, there may be a measure to limit the market share for companies with a monopoly position. In such a case, market players will not be able to defend their market shares and will lose share anyway. Suppose, before antitrust restrictions were imposed, the market was divided in half between market players and there was an agreement between them to set a monopoly price of P_m. After the introduction of restrictions, the maximum possible market share of the companies is:

$$x_i = \frac{q_i}{Q} \; or \; \frac{q_i}{Q} \times 100\% \tag{6}$$

Therefore, the maximum share for each of the monopoly companies equals x_m (the share is maximum) and the output of their products is equal:

$$q_m = x_m \times Q \tag{7}$$

Other companies entering the market due to restrictions have a minimum market share x_c:

$$x_c = 1 - 2x_m \; (\times 100\%) \; or \frac{Q - 2q_m}{Q} (\times 100\%) \tag{8}$$

The market share of each of the n new companies is equal:

$$x_i = \frac{x_c}{n} \tag{9}$$

In this situation, the market has all the same restrictions: the price can only range from P_i to P^*; in addition, monopolists are forbidden to conduct any activity which could prevent healthy competition, including buying out companies or reducing the price too much so that the company leaves the industry (this is why the lower bound price is limited to P^*). Since monopolists cannot use products quantity as a mean of influencing the market (due to the existence of smaller companies that want a larger market share from the monopolist, as well as restrictions in the maximum market share), the price remains the only sure way to influence the market, which makes this model closer to Bertrand's one [18].

In the Bertrand model, the largest possible income π generated by industry is equal to:

$$\pi = \frac{(a-c)^2}{4b} \tag{10}$$

This can be deduced by multiplying the monopoly price in the market (P_m; formula 2) and the monopoly volume, which then equals:

$$\mathrm{P} = a - bQ; \; \frac{a+c}{2} = a - bQ_m; \; Q_m = \frac{a-c}{2b} \tag{11}$$

Due to Bertrand, in order to obtain additional profits, one of the monopoly companies will reduce the price by an amount ξ to the minimum level at which the price equals the costs, i.e. the equilibrium condition in a perfectly competitive market will be fulfilled. If antitrust restrictions are introduced, the role of a market player that lowers the price will be played rather by small companies entering the market than one of the monopolists. In this case, although not immediately, but after some time, in particular after the monopoly companies reach the maximum level of production allowed to them in the market of x_m they will have to reduce their price to the level of P^*. An increase in price after reaching given price level would not make sense either, due to the broken demand curve that has been precisely reviewed in Figure 2. This market situation is depicted in Figure 3 below.

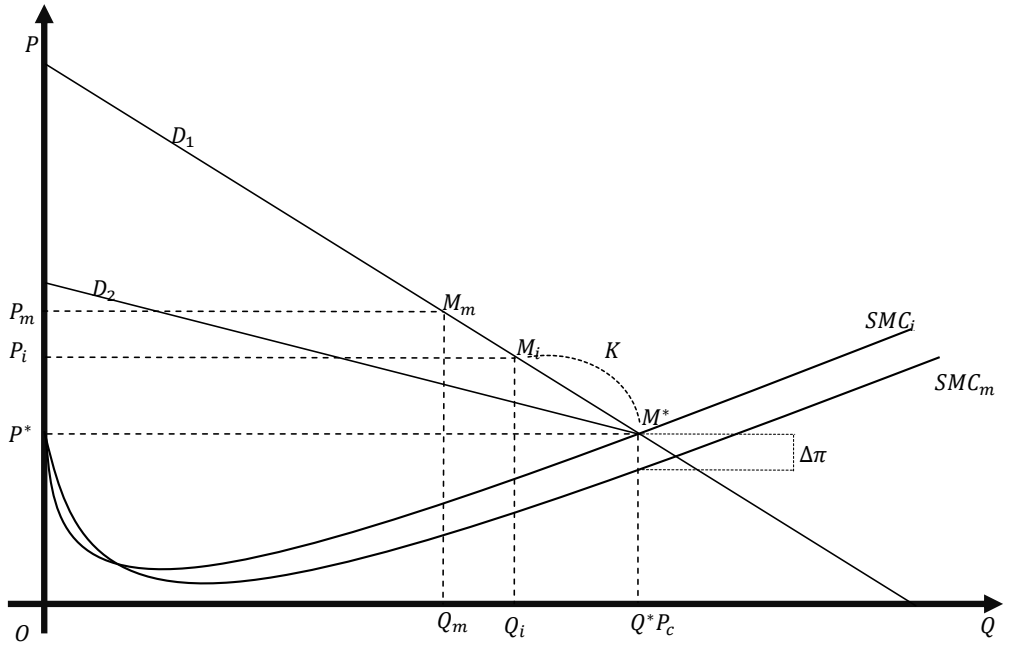

Figure 3. Monopoly market situation in regulating price, monopoly market volume, and the presence of administrative prohibitions on monopolies

Source: author's devising

In the Figure 3: D_1 and D_2 – are, respectively, the demand areas and the broken demand curve (i.e. the demand curve for a monopolist who wants to raise the price); K is the price range at which new companies will enter the market; SMC_i=c_i – marginal costs of new (small) companies in the market SMC_m=c_m – marginal costs of monopolists; $\Delta\pi$ – is the difference in profits of new companies in the market and monopolists.

Figure 3 shows that once the new maximum price is set at P_i new companies will enter the market until the number of monopoly companies decreases to x_m. After that, the monopolists have to reduce the price to the market level and the price will fall to the level of P^* where the price equals the short-run (and long run) costs of small companies on the market (SMC_i). At the same time, due mainly to economies of scale, companies will make a profit of $\Delta\pi$ or π^*. Therefore, small companies in such a market will make zero economic profit in the long run and monopolists will make a small profit equal to:

$$\pi^* = SMC_i - SMC_m \quad (12)$$

Nevertheless, their profits will be considerably lower than they would have gotten at the price levels of P_m and P_i. Each of the small companies will have a market share of $\frac{100-2x_m}{n}$ and will produce output equal to $\frac{Q(100-2x_m)}{n}$ or q_n. The monopolists, on the other hand, will get market shares of x_m and market volume Qx_m or q_m. In general, the set of small companies in a given market can be seen as one large monopoly company, unwilling to enter into a cartel with other monopolists, and constantly in a struggle for supremacy, but with higher costs.

Table 3 was created in order to summarise the actions of monopolists in an oligopoly market in the case of antitrust policy, with the main conclusions.

Table 3. Most profitable company policies under different types of anti-monopoly policies in the market

Anti-monopoly policy	The most favourable company policies	Monopolist profits	Monopolist market share	Profits of new companies in the market	New company's market share
Introduction of administrative prohibitions	Price reduction to P^* level	$P^* - c_m$	50%	0	0
Setting price limits	Selling at the highest possible price and preventing other companies from entering the market (mainly by buying them out)	$P_i - c_m$	50%	0	0

Table 3, Continued

Anti-monopoly policy	The most favourable company policies	Monopolist profits	Monopolist market share	Profits of new companies in the market	New company's market share
Establishing market share	Selling at a monopoly price until the market share limit is reached and then selling at P^* level; conducting activities that prevent other companies from developing significantly in the future	$\frac{(a\ \ c)}{}$ at the start and thereafter		c_i at the start and 0 thereafter	_____
Introduction of administrative prohibitions + setting price limits	Price reduction to P^* level			0	0
Establishing a marginal market share + setting price limits	Selling at the highest possible price until the market share limit is reached and then selling at P^* level; operating at a level that prevents other companies from developing significantly in the future	at the start and		$P_i - c_i$ and 0 thereafter	_____
Introduction of administrative prohibitions + establishing a marginal market share	Selling at the monopoly price until the market share limit is reached, and then selling at the P^* level	$\frac{(a\ \ c)}{}$ at the start and thereafter		at the start and 0 thereafter	_____
Introduction of administrative prohibitions + setting price limits + establishing a marginal market share	Selling at the highest possible price until the market share limit is reached, and then selling at P^*	at the start and		and 0 thereafter	_____

Source: author's devising

As Table 3 demonstrates, different types of anti-monopoly policies will benefit monopolists in different ways. Nevertheless, in any case, it is more advantageous to participate in a cartel, as creating a "price war" between monopolists, i.e. a market condition where each company tries to maximise profits by reducing the price by ξ unit (most often by 5%) [19], per Bertrand, results in zero profits for monopolists in the long run [20].

Conclusions

The study examined the main types of anti-monopoly policy in states. Among them, price policy, restriction of market shares, and administrative prohibitions were highlighted. However, anti-monopoly law differs from country to country, and the legislation itself does not prescribe the exact numbers and steps of policy action, given the individual nature of markets and situations. Therefore, in practice, every monopolist's (as well as anti-trust committee) decision in a market will be individual and special. However, the paper, with some assumptions, formed the basic, theoretically grounded, actions of monopolists in the context of antitrust policy.

The main achievement of the study is the proof that due to the existence of economies of scale, it is profitable for monopolists to cooperate with each other in a cartel even after anti-trust restrictions are imposed on the basis that ending cooperation leads to zero profits for large market players, i.e. is unprofitable for them. The only exception to this rule is when all three types of antitrust restrictions are imposed, because of which it is impossible to reduce the price below the level effective for small companies P^* as it would make them fail to get positive profits so they leave the market. Since this is unacceptable to the government, it will not allow this to happen and will increase prices on its own. Thus, another important objective of the state in creating and conducting an anti-trust policy is to monitor monopolists to prevent them from creating cartels. In addition, the paper found that new companies entering oligopoly markets after anti-trust restrictions were mostly profitable in the long run or only in the initial stages of market formation. Their development in a given market, even after the introduction of some types of antitrust restrictions, is difficult or impossible because of the conditions investigated and the unmistakable policies of monopolists.

Therefore, an anti-trust policy is an effective method of creating a more competitive market and increasing public welfare, although it does not deprive monopolists of all the benefits of the market, in particular, additional revenue at the expense of the size of these companies.

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Використання теорії ігор у конкурентному середовищі для побудови стратегії взаємовигоди (з урахуванням антимонопольних обмежень)

Белла Хоріта

Технічний університет Ейндховена
NL-5612 AJ, Де Заале, м. Ейндговен, Північний Брабант, Нідерланди

Анотація. Сучасний економічний простір характеризується актуалізацією такої ринкової структури, як олігополія, у зв'язку з чим виникає потреба в її належному теоретичному та емпіричному дослідженні. Мета роботи полягає у проведенні аналізу використання теорії ігор на ринку олігополії за вказаних умов. Основними науковими методами, використаними під час написання роботи, стали теоретичні методи, зокрема аналіз, синтез, історичний та статистичний методи. Визначено, що теорія ігор одна із найважливіших відносно нових математичних теорій, що застосовуються в процесі розробки різних видів економічних моделей, зокрема аналізу ринків і формування стратегій діяльності підприємств. Підтверджено, що найчастіше теорію ігор застосовують до аналізу ринку олігополії, тобто такого ринку, на якому ведуть діяльність від двох до декількох великих гравців та рішення кожного з яких впливають як на ринок загалом, так і на доходи та становище інших «гравців» ринку шляхом впливу на ціну виготовленої продукції чи обсяги її випуску (залежно від моделі). Вказано, що існує безліч способів застосувати теорію ігор як основну, і спробувати пояснити стан, в якому перебуватиме ринок, доходи, втрати та частка виробників на ринку олігополії через різні умови та змінні. У цій роботі розглянуто використання теорії ігор з урахуванням антимонопольних обмежень та при отриманні компаніями олігополістами взаємної вигоди. Обґрунтовано, що найчастіше в моделях, створюваних економістами, взаємна вигода компаній на ринку олігополії передбачає існування домовленості між учасниками ринку, за якої компанії отримують більшу вигоду, ніж за умови конкуренції між ними (картеля). Практична цінність статті полягає у теоретичному обґрунтуванні теорій ігор на ринках загалом, у наданні певних практичних стратегій діяльності компаній на ринках, що стане корисним і для студентів у процесі навчання, і для інших вчених економічних дисциплін

Ключові слова: олігополія, теорія ігор, аналіз ринків, антимонопольна політика, картель