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# Barriers to entry vs. competitive strategy

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## ABSTRACT

This paper tries to expose how incumbents within an industry promote difficulties in order to impede new entrants. These are known as creating barriers to entry and have always been misunderstood by scholars of economics. The main reason for this can be found in the contrasts similar to “living off rents” as opposed to “living off profits” which makes industries inefficient. When a tribunal (in the case of Europe: Tribunal for the Defence of Free Competition) or Courts (in the case of the USA) have proven that a company, or merger, has cooperated in exercising market power; due to its supremacy, through whatever means, it seems appropriate to reduce this market power.

The structure-Conduct-Performance paradigm provides us with theoretical tools to identify the exercise of this market power and an analysis of barriers to entry is the best method to categorize this behaviour. However, in the light of new research traditional barriers to entry, such as Industrial concentration or excess of capacity installed have been reconsidered. Industrial concentration is considered to be more an indicator of optimum plant size while installed capacity in an industry should be linked with sunk costs. This paper shows the evolution of the economic theory on these issues.

**Keywords:** history of economic thought, barriers to entry, strategy competitive, market structures.

**Summary:** 1. Introduction 2. Structure-Conduct-Performance Paradigm in a nutshell 3. Barriers to entry: old theoretical definition 4. Three old barriers to entry as competitive strategy today 5. Conclusions.

## Barreras de entrada vs estrategia competitiva

### RESUMEN

Este artículo trata de exponer cómo las empresas ya instaladas dentro de una industria tratan de impedir la entrada de otras empresas. Este comportamiento es conocido como la creación de barreras de entrada y siempre ha sido mal entendido por los académicos de la economía. La razón principal se puede encontrar en los debates académicos sobre "vivir de rentas" en lugar de "vivir de las ganancias" que hace que algunas industrias sean ineficientes. Cuando el Tribunal de Defensa de la Libre Competencia Europeo o los tribunales (en el caso de los EE.UU.) han demostrado que una empresa, o de una fusión de empresas, han ejercido poder de mercado; debido a su supremacía o a través de cualquier medio, parece oportuno reducir este poder de mercado.

El paradigma estructura-conducta-desempeño nos proporcionaba las herramientas teóricas para identificar el ejercicio de este poder de mercado y un análisis de las barreras de entrada como el mejor método para categorizar este comportamiento. Sin embargo, a la luz de nuevas investigaciones, las barreras tradicionales a la entrada, como la concentración industrial o exceso de capacidad instalada han sido reconsideradas. La concentración industrial se considera que es más un indicador del tamaño óptimo de la planta, mientras que la capacidad instalada en una industria debería estar vinculada con los costos hundidos. En este trabajo se muestra la evolución de la teoría económica en estos temas.

**Palabras clave:** historia del pensamiento económico, barreras de entrada, estrategia competitiva, estructuras de mercado.

**Sumario:** 1. Introducción 2. Paradigma estructura-conducta-desempeño en pocas palabras 3. Las barreras de entrada: antigua definición teórica 4. Tres viejas barreras a la entrada como estrategia competitiva de hoy 5. Conclusiones

### 1. INTRODUCTION

The behaviour of companies within their industries, competition or agreements, to share the market or to expel new competitors, etc. has been a recurrent topic in economic theory when decoding the criteria used by firms to make decisions. The criteria of profit maximization are the most widely accepted (although some academics prefer to use sells maximization). In the real world, how can we distinguish when companies compete or cooperate with each other? If we look at firms improved profits or sales, it makes sense that companies compete for clients or customers, and customization (which is the way to cultivate customer loyalty) is at the edge of this behaviour. But, if a firm achieves a monopoly of raw materials, or any other monopoly, its natural behaviour would be for it to improve its portfolio. The latter takes place for a short time in developed countries. The former happens when the firm's survival depends on how many clients the companies are capable of keeping or maintaining. This could be representative of a few industries

and services, and mainly concentrated in little and medium companies. This market structure has been characterized by several companies, competing in domestic, even local, markets and that have a short growing capacity. Keeping in mind that in the History of Business there are plenty of examples of small companies which became big firms because they made a right decision at a precise moment / with good timing; however this is not our issue.

What does matter in this paper is to present the behaviour of companies within markets which allows for the exercise of some kind of market power. Traditionally there is the one called a merger between several companies, and that merger behaves as one unique firm with the understanding that while all the firms of the merger operate in a market they can share (geographically, almost always) profits being guaranteed while fighting for clients is rendered unnecessary. At a glance it seems that stealing clients could be the natural behaviour of fringe companies, despite it not always being the best for them. The other possibility for incumbents, should be fixing the price by agreement and with penalties for mavericks; this is possible in so far as the companies are as homogeneous as the product; however, these agreements are continuously broken by mavericks and free-riders. The same model of exercise of market power could be applied to industries composed of a few companies (not more than 5) that share their market quote thanks to stability in time; in this case, we suppose that fringe companies act as free-riders under the umbrella provided by market leaders. Traditionally, agreement to share a market tends to continue in the long run, while sharing clients is an agreement more difficult to keep.

Within Cournot's oligopoly model, economic theory tries to develop tools to demonstrate bad behaviour between companies in the same industry. In the fifties of the twentieth century, the price limit theory developed by Joe Bain, Paolo Sylos-Labini and Franco Modigliani, who built a model in order to demonstrate the exercise of market power in an industry. During the eighties, the game theory, cooperative games and uncooperative as well, attempted to analyse firms' strategic behaviour on profits maximization. Since both models were created, a controversy over barriers to entry and strategy became relevant. This is the topic of this paper.

The question is; are separate companies trying to expel competitors for, as Marshal taught us, competitors tend to decrease the price and at that point reduce profits, or are firms are just trying to survive in an industry without pity for inefficient companies, which means that having an advantage over the others is the only way to carry on? For instance, a pharmaceutical patent could be considered as an advantage due to its years of research and too much money spent on the same patent could be analysed as the way drug companies discourage other companies from entering into their market; thus implying we are elephants, little ant, if you want to steal our clients you must fight.

At that moment, it is convenient to bear in mind that the cornerstone of imperfect competition in economic theory is to improve market competition.

Focusing that in the United States there are courts and judges who pass sentences over bad behaviour of firms, helped by guidelines (but not laws), whereas in Europe there is the Tribunal for the Defence of Free Competition. Both entities, in the case of a formal complaint, request independent analysts, who report their evaluation of the affected market; these reports should be used to prove or disprove the abuse of a dominant position creating competitors expulsion; in the light of this information, courts or tribunals rule the required sentence. This paper is about the change that happened in the evaluation of the oldest three barriers to entry, industrial concentration, excess of capacity installed and advertising. Since the Structure-Conduct-Performance paradigm was identified both barriers to entry have been considered as such but in the light of new research during seventies and eighties of the past century, we have to change the analytical approach of clarification.

## **2. STRUCTURE-CONDUCT-PERFORMANCE PARADIGM IN A NUTSHELL**

In order to demonstrate unfair competition possibilities, as agreement to share market through market power, the antitrust regulator established to analyse the market of a specific product within Structure-conduct-Performance framework, the first consequence should be a overprice in the market higher than competitive price (or benchmark or shadow price), the other possibility should be an increase of this market price not susceptible to be explained by increase of cost. The Structure-Conduct-Performance paradigm named this price as limit price and defined as a non-equilibrium price because included extra-profits due to rents generated by market control. The majority of theoretical analyses use Cournot models where two firms share market output and the price is the dependent variable of this share.

The way to exercise market power is to erect barriers to entry otherwise any rival could be incumbent, attracted by high price, and erode extra-profits, technically this situation should be happens in the long run, when barriers to entry must be disappearing as every market failure. In the short run, antitrust regulator guards barriers to entry because there is the main way to exercise market power within any kind of market.

The methodological analysis into S-C-P included firstly an accurate knowledge of conditions of supply and demand, market structure, conduct of incumbents in the market and performance in efficiency and welfare.

Defining conditions of supply as:

- Raw materials and their property rights, legislation domestic or outsider about the extraction of raw materials.
- Technology and its property rights, legislation, patents.
- Business position into the market, possibilities of survives, and so on.

Defining conditions of demand as:

- Price elasticity of demand measures the sensitivity of quantity demanded to changes in price. Higher price elasticity of demand implies a lot of substitutes.
- Rate of growth of demand, as higher is the growth more interest of rivals to enter in the market
- Substitute products, more amount of substitute allows less market power.
- Marketing type, or selling strategy.
- Purchase method, mainly if the purchase allows customization.

Defining market **structure** as:

- Number of sellers and buyers. As much as possible more competitive became a market
- Product differentiation. As much product branches or more type of product less likelihood of exercise market power by the main companies within a market.
- Cost structure. More sunk costs should be considered as a mechanism of rival's deterrence
- Vertical integration. This variable takes relevance in the kind of contracts that the companies signed with providers and delivers. The increase of vertical integration in an industry should be considered as a mechanism to keep market power
- Barriers to entry. Higher barriers of every kind mean that rivals should have difficult or prohibited the entry in a market.

Defining firms' **conduct** in their markets in relation with its market structure:

- Pricing behavior. Rise prices is the conduct that alerts the authorities
- Product strategy defined as the way that the company made and sells its outputs.
- Research and innovation defined as cost supports by the firms.
- Legal tactics. Understanding mainly as capture of state

The main variables to analyze the firms' **performance** within its market structure are below and all of them rise as competitiveness market improves:

- Production and allocative efficiency
- Progress
- Full employment
- Equity

All of these variables established by Structure-Conduct-Performance in order to test the workable competition within the markets are relevant but quite difficult to

measure. Also the discrimination by relevance in the analysis became problematic. Some researchers pointed out the difficulty to make a perfect definition of them. But when we are out of the academic field and a scientific economic advantage is used in the real world, for example in a Judge for injuries suffered by a company because the abuse of the dominant position in a market by incumbents, the economy as science must to give tools to help courts. The economic science employs the price as first variable capable to measure the problems into a market. The limit price theory developed by Bain-Sylos Labini-Modigliani at the end of the fifties in the past century allows to demonstrate when a market is not working in a fair way; at the same time, this economic proposal respect the traditional economic theory. In other words, the limit price theory lacks of methodological problems and is a worthwhile tool to lawyers.

### 3. BARRIERS TO ENTRY: OLD THEORETICAL DEFINITION

The most fruitful point of discussion between Joe Bain and George Stigler was how much time the incumbents within an industry can maintain their share of the market while other firms threaten to sell their own product to the same customers. In other words, how established firms behave when a new competitor appears in a shared market. The cornerstone is how much it costs to keep the prey, as a simile we can imagine a cheetah, which has just hunted a Thomson's gazelle. At this moment a laughing hyena becomes visible. The natural behaviour of the cheetah should be to eat as fast as it can and run away just when the hyena is able to touch its dots. Like a cheetah, the firm keeps its market until cost will be its death. The collaboration (collusion in economic words) with other firms in order to push out the new competitor would be a useful way; however, the cost to maintain a market for a long time is higher than to compete.

Maintaining conditions of the old Marshall' model, during the forties George Stigler used a new production function; this new function allows a firm to obtain the monopoly within its own industry, mainly through new input combinations or because it was a pioneer in an industry. The point of Stigler's contribution is to smoke out the tendency to impede entry of new competitors within an industry under the guise of regular firms' behaviour. Stigler pointed out that some unfair trade practices have been a tribute to Yankee ingenuity, and he said that Federal Trade Commission admit that some of them survives and they could be considered as barriers to trade:

'Localized price cutting, bribery and coercion of customers, bribery and coercion of sources of supplies; fake infringement suits, creation of dissent among employees, spreading rumours that competing products are inferior, and sabotage' [Stigler, 1946, p. 209]

Also, the control of entry by incumbents, have been made using:

- ‘1. - Geographical barriers (tax powers, highway control, health and sanitation powers, suppress out-of-state competition) (state legislation about the use of 75% of local butter as raw material in Alabama).
2. - Discrimination between types of organizations (anti-chain store legislation) and
3. - Licensing of new competitors. (Crafts)’ [Stigler, 1946, p. 211]

He included suppression of substitutes, prevention of price competition, restriction of output and miscellaneous policies. The conclusion of these frictions in markets is that the determination of cartel price is much difficult than competitive markets. The relevant point has to be finding fact that:

‘If a cartel does not change its price when demand falls because it fears that as subsequent increase would lead to an antitrust prosecution, the prospective loss in revenue or increase in cost because of such a prosecution is included in the calculations of the cartel’[Stigler, 1946, p. 279]

At the same time, Joe Bain built the theory of limit price and he explained the behaviour of companies in their industry, under the lens of oligopoly theory Bain wrote in 1948:

‘If they are subject to an effective threat of entry, so that new firms would enter at the price OP, but can exclude entry at a lower “limit” price, they may do this if the long-run profits promised to them by the later policy are greater’ [Bain, 1952, p. 286]

Technically, if one company detects a rival, the natural behaviour should be to lower the price in the market: a low price means low profits for the new entrant and perhaps to rethink decision; which means, by the way, that profits in the long run have to survive otherwise the incumbents could have problems. In this theory had to include what exactly barrier to entry means, Bain made one of the less disseminate definitions of entry barrier, he wrote:

‘A *barrier to entry* of some height instead typically permits established firms to raise price above the minimum cost level without inducting an automatic correction through entry and potentially to raise it high enough to permit them to operate profitably with unit costs which are not the lowest attainable for the going industry output’[Bain, 1952, p. 441]

Putting together the theory about market structure developed in 1943 and conduct built into an oligopoly model where firms behave in a natural way, expelling rivals, only performance left in order to have a whole analytical framework. Even at this time the weakness of limit price theory shows, in the case that the market structure was made accurately, even with a precise model for conduct, scientifically there is no way to confirm performance.

For the typical circumstances giving rise to an *absolute cost advantage* to established firms, the measure will be:

- Control of production techniques by established firms
- Imperfections in the markets for hired factors of production
- Significant limitations of the supplies of productive factors in specific markets
- Money-market conditions imposing higher interest rates upon potential entrants than upon established firms.

For the typical circumstances giving rise to a *product differentiation advantage* to established firms, the successful variables are:

- The accumulative preference of buyers for established brand names and company reputations
- Control of superior product designs by established firms through patents
- Ownership or contractual control by established firms of favored distributive outlets.

In 1956 Joe Bain published *Barriers of New Competition, Their Character and Consequences in Manufacturing Industries*, and this book even today is controversial. The beginning of Bain's research was how firms behave within their own industry. The best way to understand the idea is to read his own words:

'The investigation was made because of two beliefs: (1) that most analyses of how business competition works and what makes it work have given little emphasis to the force of the potential or threatened competition of possible new competitors, placing a disproportionate emphasis on competition among firms already established in any industry; (2) that so far as economists have recognized the possible importance of this 'condition of entry', they have no very good idea of how important it actually is'[Bain, 1956, p. 1]

A few pages later Bain defined exactly what he had in mind when thinking of entry conditions, as a state of potential competition from possible new sellers. Bain thought of the advantages of established firms within the industry over its rivals



and concluded that the only way to demonstrate that the incumbents exercise market power got by this advantages should be reflected in a persistently raise of industry prices above the competitive level, but the maximum value of raise is a price which seems unattractive to new companies. This price is known as limit price.

#### **4. THREE OLD BARRIERS TO ENTRY AS COMPETITIVE STRATEGY TODAY**

##### **ECONOMIES OF SCALE, MARKET CONTROL, INDUSTRIAL CONCENTRATION, OPTIMUM PLANT SIZE**

*Economies of large scale* as barrier to entry works because the entrant enters at a small enough scale so that his entry will tend to have no perceptible effect on the prices or outputs of established firms; but if the new entrant enters at a large scale thus necessarily influencing both prices and output in the industry. In a model with entry near the minimum optimal scale, established firms may reduce their total output enough to allow new entrant a market share, even at unchanged prices.

The way to assess economies of scale should be to find the relationship between the scale of production in a plant or firm and the unit cost of production and distribution. The excess of concentration in an industry, in the sense that shows firm's size, is evidently needed for lowest production and distribution costs. The theoretical origins are to be found in the old model of Cournot's oligopoly; where equilibrium is obtained through the sharing of production between firms, since when one firms shifts a product the other has to follow suit, and since both operate in the same market, the competitor sees market prices fall, technically as low as the Bain-Sylos-Modigliani limit price.

Economies of scale work as a barrier to entry because of its implication of profit concentration and the randomness of an agreement between incumbents to maintain the market share. Theoretically, old model assesses the industrial concentration to know how high the market power was. Since the 1980's Hirschman-Herfindahl index (IHH) has been used to evaluate industrial concentration; calculated by summing the squares of the individual market shares of all the firms included in the market; empirically, there is a positive correlation between concentration and profits that have been confirmed by published research.

But there was also some criticism that began to be considered, Frederic Scherer in 1970 tried to offer a new way of assessing pecuniary economies of scale. He used the simple case, which large firms obtain price concession from suppliers, and his conclusions were:

'If differential bargaining power is the cause, income is merely redistributed from the supplier to the buyer. Still the ability to obtain such concessions can solidify a large firm's position in the market, and so pecuniary economies in procurement are, like other

scale economies, a concentration increasing influence' [Scherer, 1970, p. 100]

Furthermore, big enterprises should enjoy a cost advantage in raising financial capital, usually they get lower interests rate, and other privileges in their loans. The conclusion is clear, if researchers have observable data, in the real world, as firm size distributions 'often correspond closely to those generated by stochastic process models' [Scherer, 1970, p. 130]. That means researchers have the possibility to demonstrate no fair competition in markets, due to market power of big firms using statistical tools.

The main consequence of the step forward in this field is the inclusion of *behaviour* into the traditional Industrial Organization models. The theory of Thomas Schelling written in his famous book entitled *The strategy of conflict* (1960), allows for Scherer to assume that when market concentration is high, the sellers decisions about prices are dependent, and firms barely avoid recognizing their connections, the advantages are bigger than looking only after their self-interest, understood as compete to each other and get more clients. Scherer wrote: 'As a result, we should expect oligopolistic industries to exhibit a tendency toward the maximization of collective profits, approximating the pricing behaviour associated with pure monopoly' [Scherer, 1970, p. 157]. Since Scherer's hypothesis some economic scholars assume, within an oligopoly, as a rule of thumb the coordination among incumbents to agree costs and prices. This is an old rule of economic theory, but now it is possible to solve the old problem that refers to how much responsibility in prices is due to the cost and how much is due to changes in demand. The conclusion of Scherer leaves no doubts to our mind:

'Coordination of pricing decisions is also aided when a trade association develops standard cost accounting systems for the benefit of its members. When pricing decisions are based upon some kind of full cost rule, we should expect as a corollary that prices will be more responsive to changes in cost than to changes in demand' [Scherer, 1970, p. 178]

Following the same line of thought, Harold Demsetz in 1973 worked on the Research Program in Competition and Public Policy at U.C.L.A. also discusses industrial concentration and market power. He began his paper recognising that the power due to industrial concentration is necessary to the economic system, with these words: 'To destroy such power when it arises may very well remove the incentive to progress' [Demsetz, 1973, p. 3]. He said that industrial concentration does not always mean monopoly power behaviour, the correlation is not direct, at any given collusive price, the amounts of monopoly profits will be proportional to output, also capital investment will be proportional to output, so we can expect the

rate of return to be invariant with respect to size of firm. Demsetz demonstrated his conclusion empirically by calculus of industrial concentration and monopoly power for 95 three digit American industries in 1963. And Richard Schmalensee in 1978 wrote about the behaviour of a new industry: it seems that price competition was avoided and rivalry focused on new brand introductions, which tends to deter entry and protect profits. Schmalensee applied this model to the breakfast cereal industry. Their assumptions were, first, in this industry the best available evidence suggests that the minimum efficient firm size in this market involved 3-5% market share. Second, scale economies of this magnitude would not seem sufficient to explain the prolonged persistence of very high profits. Third, neither patents nor ownership of the sources of raw materials is important in this industry, and fourth, neither the absolute capital costs of efficient entry or cost nor any of the other factors would seem sufficient to explain the lack of entry into this market during the 1950-1970 period. The solution to this dilemma is to create product differentiation. In this case, the barrier to entry turns from an old theoretical model to non-cooperative games, such as a limit pricing theory to the new theoretical framework to be enforced in economics.

At present, industrial concentration is no longer considered a barrier to entry. Strictly speaking, the production percentage concentrated by one or five firms at the same industry is not market power unquestioned. More information about the behaviour of leaders has to be collected and analysed before the court's sentence in order to break off the merger. Nowadays, the size of a company in comparison with other incumbents within the same industry doesn't matter; the point is the Optimum plant size because in companies' size has been analysed as a strategic decision to survive in the market.

#### EXCESS OF CAPACITY INSTALLED, ECONOMIES OF LARGE SCALE, SUNK COST

The use of capacity to expel competitors into an industry is the oldest barrier to entry; the idea was introduced by Edward Chamberlin into his thesis defended in 1927, but not in this way. Professor Chamberlin said that excess of capacity is 'wastes of competition' [Chamberlin, 1949, p. 109] tied with the John Maurice Clark idea about that excess of capacity must be considered as characteristic of industry and connected with peaks of demand. At this time the capacity installed in an industry was considered only as the way to satisfy clients every time; companies have to invest in capacity in order to anticipate future demands. Until the fifties, the capacity installed in an industry, as the sum of every capacity of the firms or industrial plants did not be used as strategic decision. There is necessary to assume that the industry behave as an oligopoly and to include a leader in the industry, who should be able to increase output and go down equilibrium price and then expel new entrants because the new price is too low to earn money entering in this industry. While economists analysed decreasing costs they consider it to be

possibly due to the excess of capacity installed in an industry (at this time, they have the empirical demonstration in the case of the railways industry made by Clark). That means, if an industry works with excess of capacity it assumes that it can move through the average costs curve to get the price in a benchmark. In other words, the equilibrium price on the long run is not getting in the minimum of the average costs curve where the connection with the marginal costs curve happens. Technically it is a breaking point in the Marshallian equilibrium conditions; nonetheless it should be possible to propose new equations able to reach the equilibrium.

John Cassels defines excess of capacity as: 'The difference between the output that the productive agent in question is capable of producing and the output it is actually called on to produce' [Cassels, 1937, p. 427] The only way to use the excess of capacity to expel competitors is using low prices, but in Chamberlin's sense when demand is elastic the price policies (or wars) of companies are likely non-aggressive. In this case we must distinguish excess capacity of overinvestment because second one is close to monopolistic competition with aggressive price policies whereas excess of capacity could be considered as involuntary fixed cost.

In the same vein, and arguing about the use of installed capacity, Nicolas Kaldor wrote that: 'The heart of the whole matter ... is the relation of price to marginal cost' [Kaldor, 1938, p. 515] for the whole industry or for each company, if we are able to discover each marginal cost of each differentiated product of each company, then: 'The degree of market imperfection depends on the numbers of firms in any given section of the competitive field'[Kaldor, 1938, p. 516]. It seems that the use of capacity doesn't seem as a first-class tool to expel competitors. Therefore, Kaldor established that the degree of freedom of entry depends on the strength of institutional privileges.

Maintaining excess capacity in a plant gives the chance to raise production in the short-term, the object being that competitor sees market prices fall. Technically that is known as the limit price theory in the old model of Cournot's Oligopoly. Excess capacity could be assessing the difference between the maximum production possible within the industry and its real production. That means that excess capacity gives industry the control of the price, because incumbents can increase or decrease their production at will; and this behaviour moves the price as well. In fact, excess of capacity works as barrier to entry if rivals believe the threats launched by incumbents. In the case of capacity the point is how much costs the old producers support and for how long. Only if one takes into account the storage of no sellers' products and the reduction of price during the time of fight is possible to reckon how convenient is to keep the market in front to share it. The limit price theory had serious theoretical problems to hold any industrial's price as a measure of a barrier to entry. At least, a barrier to entry denominates the utilization of

excess of installed capacity in an industry in order to expel new entrants in the market could be reconsidered.

Since the 1970's, several authors worked on disconfirming excess of capacity as a barrier to entry. Most of them can be included within the Chicago School framework. The point of their proposal was how much does it cost to maintain excess capacity in the production process and the difficulty of controlling this cost in the long run. They discussed the center of the limit price theory because within a limit price model, the oligopoly solution is reached by the movement of production of the industry towards equilibrium. Therefore, the total production of some of the industries analysed depends on the use of its production capacity. Whereas the scholars who follow Bain-Sylos-Modigliani's price limit theory, believe that excess capacity works as barrier to entry, while other researches don't agree, and they affirm that to maintain an excess capacity is expensive for an firms in every industry.

The point is when excess capacity does not lead to creation of a credible threat; it may still act as a barrier to entry by shifting the risk-return perceptions of potential entrants enough to redirect the potential entrants' investments into other industries. This is the theory developed by Baumol and Willing in 1981, which takes into consideration that some fixed costs will be converted into sunk cost, in this case working as a barrier to entry. A few articles left which separate excess capacity as a barrier to entry itself, the tendency was to analyse capacity linked with economies of scale and scope as a strategy business decision. In other words, to build excess of capacity in a factory began to be analysed as a sunk cost, opening a new academic arguing about what exactly sunk costs means.

At this moment seems convenient to include the difference between sunk cost and fixed cost: fixed costs are costs that must be borne by firms, which ever output, and they do not vary when the magnitude of output changes. These costs are not variable either in the short or the long run. Any cost that is not fixed is defined to be variable. Baumol offers appropriate example to keep in mind, quotation in extensor may be justified:

'The investing for one airplane to fly for Boston to Los Angeles, is fixed whose amount, does not vary with number of passengers until capacity is reached. Thus, this cost is fixed, and does not become variable even in the long run, because one cannot run an airline on the route with zero airplanes. In contrast, this cost is not sunk because, if traffic between Boston and Los Angeles, declines drastically, the plane can be shifted to serve another route. A large factory with a 10 year useful life, however, constitutes a cost that is sunk for that period, but it need not be fixed because at the end of 10 years it may be desirable to produce less than before, using a smaller factory whose investment cost is lower. The distinction is

not mere semantics; the two types of cost have very different implications for market performance and economic efficiency' [Baumol, 1996, p. 56]

As a conclusion, according to the light shed on the new research, the excess capacity doesn't work as a barrier to entry in the long run, because it is expensive, unless economies of large scale are being analyzed under the lens of sunk cost. Specific assets are the designation that Williamson and the institutionalism theory give to old economies of large scale being sunk cost.

## ADVERTISING

Edward Chamberlin reconciles monopolistic and competitive forces, by introducing a modelling paradigm that emphasizes advertising; the way is through expanding demand and as required selling costs. The main effect of advertising is its ability to change prices due to the elasticity effect; technically: 'If advertising makes the firm's demand less elastic, as advertising might when it creates wants and encourages brand loyalty' [Bagwell, 2007, p. 1710], and this is precisely the way it works as a barrier to entry because when advertising creates brand loyalty, followed by: 'Established firms are then able to charge high prices and earn significant profits without facing entry' [Bagwell, 2007, p. 1710], and the advertising generate a deterrence of entry in an industry.

Dorothea Braithwaite wrote in 1928 'The economic effects of advertising', this article should be considered as the start point of these issue, firstly because she defined accurately what advertising means and secondly due to she connected advertising with economic welfare. She pointed out that consumers are induced to pay a price for the commodity high enough to cover advertisement costs plus production cost; also the power of advertising to change demand of products; she answered to herself about the evidence of competition by advertisement and competition by price. The conclusion reached to explain how markets works deserve a special consideration, it was written early and it showed a irrefutable weakness of perfect competition theory, she said:

'Under conditions of perfect competition producers would gain nothing by spending money on advertisement, for those conditions assume two things. 1. - The demand curve is fixed and cannot be altered directly by producers and 2.- Since producers can sell all that they can produce at the market price, none of them could produce (at a given moment) more at that price than they are already doing'[Braithwaite, 1928, p. 23]

And when prices raise because of advertising economic welfare is at risk. Kyle Bagwell noted several years after: 'Advertising increases consumer surplus only if it is accompanied by a strict reduction in price' [Bagwell, 2007, p. 1711]

Nicholas Kaldor proposed, in 1950, a measure of monopoly power, the relevant contribution of his article was the inclusion of cost of advertising (or selling cost). About the measure of monopoly power using prices and cost in next way:  $p-c/p$  being: ' $p$  is price which covers the costs of product of potential entrant and  $c$  is cost of the representative firm.  $P-c$  is the amount by which the selling price of the representative firm can exceed its own costs' [Kaldor, 1950-51, p. 20] connected with advertising expenditures he said that: 'No generalisation seems possible as to how far  $p$  can be raised by the expenditure of selling cost and how much of the difference  $p-c$  will tend to be taken up by these outlays'[Kaldor, 1950-51, p. 21] reaching the same conclusion as Chamberlin, the economic analysis of advertising is not enough to get a accurately understanding. Connected with welfare Kaldor draws a distinction between direct and indirect effects of advertising in social welfare as follows: 'The direct effect of advertising is associated with it role in the provision of price and product-quality information to consumers, while the indirect effects of advertising include any consequent scale economies in production and distribution' [Bagwell, 2007, p. 1712] in the same line of thought, Joe Bain analysis included advertising as a preference for reputation and it erected a entry barrier in front of new products from rivals. There should be analysed in the same way that product differentiation.

It was Richard Schmalensee who explained how advertising works as a barrier to entry in the seventies. He wrote a book entitled *On the economics of advertising* (1972) where he outlined the first step of advertising into the economic field. Two years later, and using mainly the models of Bain, Caves, Scherer and Orr, this author built his own model in order to explain how advertising erects a barrier to entry because of its ability to create loyalty to the products of existing firms having dynamic effects on demand. He said: 'It seems plausible to suppose that both loyalty and inertia can be adequately modelled by a demand structure characterized by distributed lags' [Schmalensee, 1974, p. 579]. Even with demand asymmetry which is not sufficient to produce barriers to entry this issue has been analysed in econometric studies of demand and it is usually described by means of some form of distributed lag mechanism in the models estimated. Schmalensee concluded that it may build worthwhile theoretical models, which advertising effects should be used by firms in order to deter entry of rivals in a market.

During the eighties advertising survive as a barrier to entry but the theoretical framework changes. The principal reason, it can't be in other way, was the evolution of the economics theory through the use of games in order to proof his proposals. Carl Von Weizsäcker in his work on barriers to entry proposed a new analytical framework in order to analyze them; goodwill is the only barrier to entry therefore understanding the process left. The reason why we consider this barrier to

entry separately is because of its special characteristics. Goodwill can work as a barrier to entry or can work as an externality. Goodwill as a barrier to entry should be studied as an incentive for other firms to destroy the information about the quality of the products sold by others firms in the market. While goodwill is seen as an externality; in this case goodwill should be analyzed as a valuable asset, or the substitute for direct knowledge of quality. Von Weizsäcker chose the first option and concluded that: 'It is not useful to say that entrants are at a disadvantage as compared with established firms' [Weizsäcker, 1980, p. 418]. In his book, this argument was further developed:

'Goodwill is not a barrier to entry, is necessarily only a partial solution of the quality information problem, this is due to quasi risk aversion of consumers. Barriers to entry would then only exist, if consumers do not form rational expectations, but are biased in favor of products of known quality' [Weizsäcker, 1980, p. 257].

Advertising erects a barrier to entry because the ability to create loyalty to the products of existing firms have dynamic effects on demand; the way to demonstrate this barrier to entry has been the correlation between profit rates and advertising intensity. But some years later Richard Schmalensee accepts that advertising does not make it possible to protect those profits which accrue from the practice of monopoly power (Schmalensee, 1982). The conclusion is clear; it is not advertising but asymmetric information that works as a barrier to entry. Therefore, non-cooperative games seem the best theoretical framework in which to analyze how advertising could become a barrier to entry.

## 5. CONCLUSIONS

In the 1950's Joe Bain had classified the different barriers to entry, quantifying these barriers in a classification which went from important to insignificant, and George Stigler had added new barriers to the list. During the 1960's and 70's a lot of researchers using new empirical data either supported and reinforced or rejected some of the barriers to entry defended by Bain. More orthodox researches followed the same line by trying to improve the Cournot model of oligopolistic behaviour and the exclusion of competitors.

The use of excess capacity in an industry to avoid any new firm establishing itself, works through the mechanism of price modification or pre-entry price and post-entry price in an industry. We could as well we see that costs, principally storage costs, can turn out to be higher than any expected future profit; therefore we should also take into account the time the firm already established in the industry needs maintaining barriers to entry. Similarly, if the firm which wishes to enter any market believes that because of the threat of a low price, it will not be able to cover production costs, this situation will give rise to a different theoretical



model than if it does not believe in the threat. This dilemma had still not been resolved by the end of the 1970's. Present day models based on game theory are trying to solve problems posed by these threat models.

The correlation between industrial concentration and extra profits continues to be an exhaustive stimulus to empirical research. A large number of publications devoted to a wide range of industries confirm the existence of additional profits which are not the result of competition but of the use of market power. Market power increases as production is concentrated in ever fewer firms. Thus in this situation it is easier to share out a market or agree and maintain prices if there are relatively few firms operating in an industry than when there are a larger number of firms, but the larger firms can impose their leadership over the smaller firms. More orthodox economists defend the position that extra profits will disappear as competition increases, and that concentration is usually the basis of further economic growth. According to this point of view any attempt to prevent concentration and control the size of firms through the intervention of public administration could result precisely in less efficient and less competitive firms in the country, which attempts to implement these controls.

During this decade of the 1980's, the analysis of barriers to entry was improved by the introduction of games into Structure-Conduct-Performance theory. The objective of researchers was the same, to find a theoretical framework capable of demonstrating the existence of barriers to entry. The nineties shows an improvement in the analysis of sunk costs and developing new models able to distinguish sunk cost from the others kind of costs. Sunk cost deserves special consideration to the empirical economic theory and in case studies. Industrial concentration and market power is centered in the case study; the reason is that demonstrating the existence of market power should be confined to an industry that necessarily knows its market structure. Advertising moved from barrier to entry to adverse selection models, this is enough to reduce its place during this period. A good promotional campaign is not a barrier to entry; technically everyone can do it. Only the use of advertising to break the rival's reputation should be considered a barrier to entry, but there is absolutely impossible to find proofs, useful in a trial.

At present, the theory of competitive strategy shows traditional barriers to entry as competitive advantages of firms. In other words, as long as a firm maintains an advantage over its competitors, this firm can be self-maintaining within its industry. Contrarily, whether a company loses its advantages or is just starting-up (and obviously doesn't have advantages, yet); if you are an ant in elephant land it should be worthwhile to find the way to get any advantage over your competitors, otherwise the firm is condemned to extinction.

Last caveats, research in imperfect competition is the cornerstone of antitrust, not only because is the theoretical field to explain how a market works but also because researchers are often asked by courts to write reports to argue for or against, one big company's behavior. When a company makes a formal complaint

against another company, or when customers ask for a deep investigation about the exercise of market power by a company, in both cases, a company has to explain clearly in a court how it behaves within its market, it has to pay lawyers, and also it has to open confidential files. In several circumstances arguments are quite difficult to prove, and many times are “your word against his”. That courts and judges ask academics to develop theoretical tools that are worthwhile as proofs in trials, because economics is a science that at times looks like something living in an unreal world of theory far from practice. And sometimes an academic paper could include a few mistakes, irrelevant for academics, but these mistakes could destroy the credibility of lawyers or plaintiffs.

In this paper I tried to show how the economic theory has been changing in time, in order to improve the methodological framework of imperfect competition, at the same time that economy as a science is able to eliminate every argument, method, model, algorithm, which hasn't survived the test of trials. I think this is the right way to apply scientific knowledge, and this paper proves that our science is alive and thirsty for knowledge.

## BIBLIOGRAPHY

- BAIN, J. S. (1943), “The normative Problem in Industrial Organization”. *The American Economic Review*, Vol. 33 (1), 54-70.
- BAIN, J. S. (1956), *Barriers to new competition: their character and consequences in manufacturing industries*, Harvard University Press: Cambridge.
- BAIN, J. S. (1959), *Industrial Organization*, Wiley: New York.
- BAGWELL, K. (2007), “The economic analysis of advertising”, In M. Armstrong and R. Porter (eds.) *Handbook of Industrial Organization*, (Amsterdam: Elsevier), Vol. 3, p. 1701-1844.
- BAUMOL, W., PANZAR, J. and WILLIG R. (1982), *Contestable markets and the theory of industry structure*, Harcourt Brace Jovanovich: New York.
- BAUMOL, W., (1996), “Predation and the logic of the average variable cost test”, *Journal of Law and Economics*, Vol. 39, 49-72
- BOULDING, K. (1942), “The theory of the firm in the last ten years”, *The American Economic Review*, Vol. 32 (4), 791-802.
- BRAITHWAITE, D., (1928), “The economic effects of Advertising”, *The Economic Journal*, Vol. 38, 16-37.
- CASSELS, J. M., (1937), “Excess Capacity and Monopolistic competition”, *The Quarterly Journal of Economics*, Vol. 51 (3), 426-43.

- CHAMBERLIN, E. H., [1927], *The theory of monopolistic competition*, (Cambridge: Harvard University thesis 1<sup>st</sup> edn. Cambridge: Harvard
- CHANDLER, A. (1969), *Strategy and structure: chapters in the history of the industrial enterprise*, M.I.T. Press, Cambridge.
- CHANDLER, A. (1977), *The visible hand. The managerial revolution in American business*, Belknap Press: Cambridge.
- CLARK, J. B. (1901), *The control of trusts; an argument in favour of curbing the power of monopoly by a natural method*, The Macmillan Company, New York.
- CLARK, J. B. and CLARK, J. M. (1912), *The control of trusts. Augustus M Kelley*, Publishers, New York.
- CLARK, J. M. (1940), "Toward a Concept of Workable Competition", *The American Economic Review*, Vol. 30 (2), 241-56.
- COASE, R. (1937), "The nature of the firm", *Economica*, Vol. 16 (4), 386-405.
- DEMSETZ, H. (1973), "Industry structure, market rivalry and public policy", *Journal of Law and Economics*, Vol. 16 (1), p. 1-9.
- DEMSETZ, H., (1982), "Barriers of Entry", *The American Economic Review*, Vol. 72(1), 47-57.
- GASKINS, D. W. (1971), "Dynamic Limit Pricing: Optimal Pricing under Threat of Entry", *Journal of Economic Theory*, Vol. 3, 306-22.
- GREENWALD B. and JUDD K. (2005), *Competition demystified*, Porfolio, New York.
- HADLEY, A. (1896), *Economics: an account of the relations between private property and public welfare*, G.P. Putnam's sons, New York.
- KALDOR, N., (1950-51), "The economic Aspect of Advertising", *The Review of Economic Studies*, Vol. 18(1), 1-27.
- LANNING, S. G. (1987), "Cost of Maintaining a Cartel", *The Journal of Industrial Economics*, Vol. 36(2), 157-174.
- MACHLUP, F. (1946), "Marginal Analysis and empirical research", *The American Economic Review*, Vol. 36(4), 519-54.
- MASSON, E.S. and SHAANAN J. (1987), "Optimal oligopoly pricing and the threat of entry", *International Journal of Industrial Organization*, Vol. 5, 323-39.

- MODIGLIANI, F.,j (1958), "New Developments on the Oligopoly Front", *The Journal of Political Economy*, Vol. 66(3), 215-32.
- PENROSE, E. (1959), *The Theory of the Growth of the Firm*, Basil Blackwell and New York, Oxford.
- PORTER, M. (1980), *Competitive strategy: techniques for analysing industries and competitors*, The free press, New York.
- PORTER, M. (1981), "The contributions of industrial organization to strategic management", *Academy of management review*, Vol. 6 (4), 609-620.
- ROSADO-CUBERO, A. (2010), *Barriers to competition*, Pickering and Chatto, London.
- SCHMALENSEE, R. (1974), "Brand Loyalty and Barriers to Entry", *Southern Economic Journal*, Vol. 40(4), 579-588.
- SCHMALENSEE, R. (1978), "Entry deterrence in the Ready-to-Eat Breakfast Cereal Industry", *The Bell Journal of Economics*, Vol. 9(2), 305-327.
- SCHMALENSEE, R. (1981), "Economies of scale and barriers to entry". *The journal of political economy*, Vol. 89(6), 1228-1238
- SCHERER, F., (1970), *Industrial market structure and economic performance*, Rand McNally & Company, Chicago.
- SMILEY, R. (1988), "Empirical Evidence on Strategic Entry Deterrence", *International Journal of Industrial Organization*, 6, p. 167-180.
- SPENCE, A. M. (1977), "Entry, capacity, investment and oligopolistic pricing", *The Bell Journal of Economics*, Vol. 8(2), 534-544.
- SPENCE, A. M. (1980), "Notes of advertising, economies of scale, and entry barriers", *The quarterly Journal of Economics*, Vol. 95(3), 493-507.
- STIGLER, G. (1942), *The theory of competitive price*, Macmillan, New York.
- STIGLER, G. (1968), *The organization of industry*, R. D. Irwin, Homewood.
- SYLOS-LABINI, P. (1965), *Oligopolio y progreso técnico*, Oikos-Tau, Barcelona.
- WALLACE, D. H. (1936), "Monopolistic Competition and Public Policy", *American Economic Review*, Vol. 26, 77-87.
- WEIZSÄCKER, C. C. (1980), *Barriers to entry a theoretical treatment*, Springer Verlag, Berlin.