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*Anzhelika Gerasymenko**

BARRIERS TO COMPETITIVE FRINGE EXPANSION AS A SEED OF MARKET POWER

ABSTRACT: *Starting from the behavioural approach to economic competition, this paper enlarges the traditional view of economics on the essence of potential competition by including not only the potency of competition from new but also the potency of competition from existing firms of the competitive fringe and from distant substitutes because of their ability to be actualised upon changes in market conjuncture. The author specifies three types of barriers to potential competition: barriers to entry, barriers to switching demand, and barriers to competitive fringe expansion. This paper is devoted to the analysis of the latter, answering the question of their influence on the market power of incumbent firms. The theoretical and empirical analysis in the paper explains the important role of establishment and exploitation of barriers to competitive fringe expansion in maintaining the market power of a dominant firm and the maximization of its economic rent.*

KEY WORDS: *barriers to potential competition, barriers to competitive fringe expansion, market power.*

JEL CLASSIFICATION: L11, L12, L13

* Kyiv National University of Trade and Economics, Kyiv, Ukraine, e-mail:geranzhel@gmail.com

1. INTRODUCTION

The 'structure-conduct-performance' approach to economic competition analysis, which was introduced by Mason in the 1930s (Mason, 1939), fitted the dominant neoclassical paradigm of microeconomic analysis, drawing a line between the rich microeconomic theory and the insufficient empirical analysis of market organisation. However, even the empirical studies that were carried out under this approach did not succeed every time. Many of them showed a low level of correlation between market structure parameters and such indicators of market efficiency as firms' profitability, the level of their market power, allocative efficiency, etc. This stimulated a scientific search for the reasons for such a low correlation and for the factors that were able to counteract the impact of traditional structural factors (such as market concentration and price elasticity of demand) on the market equilibrium parameters and the market efficiency.

The first results of that search were in the 1950s, when Joe Bain in his 'Barriers to New Competition' raised the problem of the influence of potential competition on the conduct of incumbent firms and the nature of market equilibrium (Bain, 1956). Baumol, Panzar, and Willig based their theory of contestable markets on the important role of potential competition by limiting the market power of incumbent firms (Baumol, Panzar & Willig, 1982). Researchers showed that any member of a market that is open for entry and exit cannot exploit its power, and so has no power. Any price increase or deterioration of other selling conditions in the market results in new players entering the market and decreasing the market shares of incumbent firms and the overall market concentration, which is considered to be the main indicator of market power in mainstream economics.

These and other findings over the last fifty years have created traditions of potential competition analysis. 'Barrier to entry' changed from being a highly specialized term into a widely used one because of the increasing popularity of entry barriers' investigations. However, although these investigations evolved, they remained narrow in scope. Bain's initial look at potential competition as the competition of new entrants situated on the market border dominated this evolution by losing the other types of potential competition. That loss is not visible in the structural approach to competition analysis, but is emphasized by a behavioural approach. The potential competition is not only the competition of new firms that are ready to enter the market upon deterioration of its equilibrium parameters, but any type of inert competition (the competition of distant substitutes or the competition of existing firms of the competitive fringe which do not rival but go along with the dominant firm) that can become active upon changes in market conjuncture.

Starting from this view of potential competition, this author reconsiders the current theory of entry barriers and extends it to an examination of the extent of barriers to potential competition. Developing this idea, and considering the natural desire of incumbent firms to maintain their market power through creating different barriers, this paper investigates theoretically and empirically the impact of barriers to competitive fringe expansion, as an alternative type of barrier to potential competition, on the market power of incumbent firms.

Section 2 analyses the current approaches to the investigation of entry barriers and gives grounds for the relevancy of its extension. This includes a classification of barriers to potential competition. The third section explains the dominance theory as the theoretical basis of barriers to competitive fringe expansion creating and exploitation. The results of the author's empirical analysis of the data of the Ukrainian economy's concentration are presented in Section 4. Section 5 concludes.

2. THE NATURE AND CLASSIFICATION OF BARRIERS TO POTENTIAL COMPETITION

The term 'barrier to new/potential competition' was introduced by Bain in 1956. It refers to the advantage of established sellers in an industry over potential entrant sellers, which was reflected in the extent to which established sellers could persistently raise their prices above competitive levels without attracting new firms to enter the industry (Bain, 1956, p. 3). Such a definition equates barriers to potential competition with barriers to entry, making a first step in their mutual theoretical evolution. According to this approach the researcher classifies barriers by firms' ability to overcome them: low, overcoming, restrictive, and blocked.

Another approach to the investigation of entry barriers was introduced by Stigler. He defined a barrier as a cost of producing (at some or every rate of output) that must be borne by firms seeking to enter an industry but is not borne by firms already in the industry (Stigler, 1968, p. 67). According to this approach three types of entry barrier exist: administrative, structural, and strategic. This classification, unlike the previous one, discovers not the size but the nature of barriers. However, it has almost lost its applicability in the last fifty years. Much modern research testifies to the ability of big powerful companies to influence the activities of their actual and potential competitors not only directly, through changing the level of strategic barriers, but also by modifying the parameters of the market equilibrium or the regulatory environment, which used to be identified as structural and administrative barriers to entry. Such a company can, for example, enlarge market capacity through an active advertising campaign, or create custom or license restrictions to entry through institute of lobby.

Cross-type diffusion of entry barriers is also observed in scientists' attempts to amplify Stigler's classification. For example, Avdasheva and Rosanova put barriers such as vertical integration, diversification of firm's activity, and product differentiation into the group of nonstrategic barriers (Avdasheva &Rosanova, 1998, p.48-56), while Fyliuk identifies them as strategic (Fyliuk, 2009, p.118-119). Who is right?

Vertical integration may be identified as a vehicle for consciously limiting of potential competition, especially in the sphere of natural monopoly or adjacent to it (Tirole, 1988/ 2000, p.26). But in a transition economy with poor market infrastructure it can also be an instrument for providing continuity of the production process or a way to minimize operational risks (Williamson, 1971). The wave of mass privatization in the Ukrainian economy in the early 1990s, unlike motives of cross-subsidization, determined the conglomerate structure of Ukrainian business groups at that time. Product differentiation may reflect changes in consumer needs or be a vehicle for filling free product or place niches as a way of seeking rent. So we can see that today barriers to entry are becoming increasingly less objective and are obtaining the traits of the strategic behaviour of powerful companies.

The intensification of the barriers' strategic nature actualizes the need for one more classification: it is necessary to discover the risk points of the appearance of potential competition. Looking for the criteria of such a classification in economic theory and the practice of market operations, the author has found the inadequacy of prevailing term 'barrier to entry' to the wide range of challenges from potential competition. Among the sources of potential competition are not only new entrants from the market's border but also small incumbent firms of the competitive fringe. Growing up under the 'price umbrella' of a dominant firm, such potential competitors are converting into actual competitors, while the implicit structural competition between them and the dominant firm is turning into behavioural competition, which was described by Hayek (Hayek, 2002). Another powerful source of potential competition is the competition of distant substitutes. The price increase of natural rubber, because of a range of cartel collusions in the USA and Europe in the 1920s, stimulated the invention of its synthetic substitute and the extension of market borders (Stocking & Watkins, 1964, p.127). The penetration of aluminium cans into the market of packing materials for liquids broke down the monopoly of sheet tin producers (Scherer & Ross, 1990 /1997, p.347). The expansion and cheapening of mobile and internet telephony has limited the market power of fixed telecommunications. There is no clear entry of new firms into the market, but the market extends its boundaries to cover new firms and make them compete for consumer demand in the former zone of incumbent firms' market power.

This brings us to the understanding that the entrance of new firms is just one way of activating potential competition, while barriers to entry are only one element of incumbent firms' strategy to maintain their market power. The existence of other sources of potential competition makes powerful companies create other types of barriers to potential competition. Therefore now is the time to distinguish between 'barrier to entry' and 'barrier to potential competition'. Unlike Bain, this author defines a barrier to potential competition as any obstacle that is able to neutralize potential competition impact in the relevant market and that excludes this strategic parameter from the long-run profit-maximizing function of the powerful incumbent firm.

After defining the essence of barrier to potential competition, let us return to its classification by source of potential competition, the need for which is indicated above. There are three types of such barriers:

- Barriers to entry. This group of barriers includes all the obstacles which restrict entrance to the market by firms which have not yet been involved in a relevant or in the same production;
- Barriers to competitive fringe expansion, which keep those companies from growing in order to maintain the market power of dominant firms;
- Barriers to switching demand, which abate the competition with distant substitutes through shrinkage of relevant market boundaries in order to intensify the market power of incumbent firms.

To overcome the disparity in the investigation of different types of barriers to potential competition, this paper moves away from analysis of barriers to entry and focuses on another type of barriers to potential competition – the barriers to competitive fringe expansion.

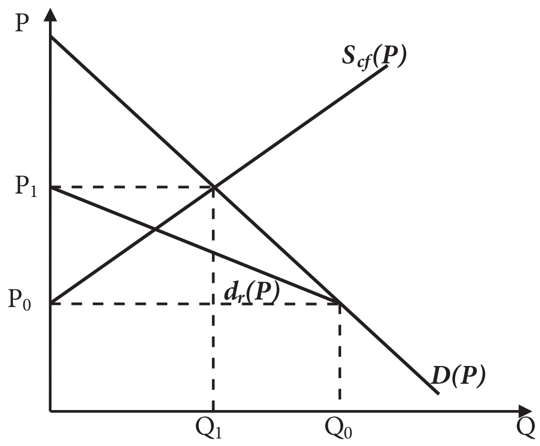
3. DOMINANCE THEORY AS A THEORETICAL BASIS OF BARRIERS TO COMPETITIVE FRINGE EXPANSION ANALYSIS

Reality rarely shows us a pure monopoly, notwithstanding the level of entry barriers. Much more often potential competitors have to deal with a dominant firm that is a strategic market leader. This leadership may be the result of a big market share (according to different countries' legislation, the firm has to control between 25% and 65% of the market to be recognized as dominant (Fyliuk, 2009, p.60) or other conditions like first-mover advantage, information asymmetry, administrative leverage, etc. All the alternative ways of leading are known as barometric leadership and are considered to be additional evidence of dominance, but are rarely the fundamental ways. Such a barometric leader may become a real market leader (or dominant firm) in the long run by using its market power to increase its market share and the economic rent.

Notwithstanding the method of dominance, a market leader firm undertakes the function of establishing the market equilibrium parameters, taking into account the existence of the competitive fringe. The residual demand curve for the dominant firm's product ($d_r(P)$) is created by deducting its competitive fringe supply ($S_{cf}(P)$) from the total demand curve ($D(P)$) at any possible price (Figure 1).

$$d_r(P) = D(P) - S_{cf}(P) \tag{1}$$

Figure 1: The model of dominant firm and its competitive fringe interdependence



Holding a first-mover advantage, the dominant firm realizes the impact of its own move on the market equilibrium. If it puts a price that is higher than P_1, firms of the competitive fringe occupy the market (the quantity supplied by the competitive fringe under this condition is always higher than the quantity demanded by consumers) without leaving space for the dominant firm. If it puts a price that is lower than P_0, it pushes all the firms of the competitive fringe out of the market. If the price fluctuates between P_0 and P_1 the demand is satisfied mutually by the dominant firm and competitive fringe firms, while the proportion of the division between these two groups of firms is determined by the strategic decision of the dominant firm on price. The higher the price set by the dominant firm, the bigger the proportion of market demand satisfied by competitive fringe firms, and the weaker the dominant firm's market position. The converse is also true (Viscusi, Vernon & Harrington, 1992/ 2004, p.220-222). Thus the dominant firm cannot behave like a monopolist that is protected by high entry barriers, but must take the activity of the competitive fringe into consideration.

If market dominance is not based on absolute but on comparative cost advantages that stream from sunk costs of previous periods or from economy of scale, maximizing profit strategy causes the dominant firm to lose its dominance. Setting the price at a level that is higher than the production costs of competitive fringe firms lets these firms make an economic profit and invest it in capacity increase. The latter is the key to competitive fringe supply increase, and the residual demand for the goods of the dominant firm decreases. Hence the profit maximizing strategy in such a market has earned the name 'myopic pricing'. If the dominant firm sets a limit price that is equal to or a little lower than the production costs of a competitive fringe firm, taking into consideration the potential competition of this group of firms, it maintains dominance.

Limit pricing is not only an example of a barrier to competitive fringe expansion. A dominant firm can also use such classical barriers as investment in excessive capacity or brand proliferation. The first means a dominant firm creating excessive capacity to use in the case of a competitive fringe's output increase, or even in the case of those companies investing in capacity increase. This strategy of a dominant firm causes a glut in the market and a falling of prices, killing two birds with one stone. On the one hand it eliminates motives for expansion – the price is too low to make a profit. On the other hand it limits the financial resources of competitive fringe firms, making them insufficient for investing in expansion. The barrier of brand proliferation works in the same way. As the costs of the dominant firm are lower, the physical, financial, intellectual, and other resources of the dominant firm are worth more than those of the competitive fringe firm, and it is able to steal the thunder in product differentiation. By settling all profitable niches in product and geographical space, the dominant firm limits the quantity of residual demand for the goods of competitive fringe firms, and in this way resists their expansion in the relevant market.

So the dominant firm has got only partial market power. It can only obtain its economic rent by raising and strengthening barriers to potential competition.

4. EMPIRICAL ANALYSIS OF BARRIERS TO COMPETITIVE FRINGE EXPANSION

The empirical analysis of Ukrainian markets of asymmetric oligopoly allows us to discover the important role of barriers to competitive fringe expansion in maintaining the market power of the dominant firm. The markets were selected for the analysis not by using the traditional methodology of the Antimonopoly Committee of Ukraine and many other competition agencies, which are based on the criteria of unilateral dominance[1], but by using the index of structural leadership elaborated by the author (k_{sl}):

$$k_{sl} = \frac{CR_1}{CR_3 - CR_1}, \tag{2}$$

where CR_1 and CR_3 are concentration ratios for one and three of the biggest firms in the relevant market, respectively.

For the markets with unilateral dominance this index plays the same role as the Linda Index[2] does for other oligopoly markets: they allow the assessment of dominant firms'/firm independence of competitive fringe firms' strategies, starting with the gap between the market shares of the leader and its closest follower. The index of structural leadership may adopt a value from 0.5 to infinity. The first tells of almost identical market shares of the first and the second biggest

1 According to the Ukrainian Law of Economic Competition Defence, a firm's market share that is bigger than 35% is considered to be an attribute of its unilateral dominance.

2 The Linda Index defines the boundary between the leaders and other firms within an oligopolistic industry. It is calculated by the formula: $L_n = \frac{1}{n(n-1)} \sum_{i=1}^{n-1} Q_i$, where Q_i is the ratio between the average share of the first i firms and the average share of the remaining n-i firms. It is calculated for two, three, and more market leaders up to the moment when L_n becomes lower than L_{n+1} ($L_n < L_{n+1}$). The proper n shows the boundary.

firms in the market, while the latter testifies to the presence of one monopolistic producer.

To select asymmetric oligopoly markets from 580 Ukrainian industrial markets[3] the critical level of index is pointed at 1.5. This means that the second biggest firm in the market is three times smaller than the first one. After selection the author investigates the changing dynamics of the biggest (dominant) firm's market share in every selected market through the five years of 2006-2010. The results show the negligible volatility of such market shares. The average value of the index of the dominant firm's market share intertemporal change, which is calculated by dividing the market share of the dominant firm in 2010 by its market share in 2006, is 0.97 (Table 1). This testifies to the dominant firms' immunity from potential competition of the competitive fringe and the effectiveness of existing barriers to competitive fringe expansion.

Table 1: Influence of dominance power on dominant firms' market share intertemporal change

Group of markets by index of structural leadership, 2006	Average value of the index of dominant firm's market share intertemporal change
$1.5 \le k_{sl} < 2$	1.08
$2 \le k_{sl} < 5$	0.92
$5 \le k_{sl} < \infty$	0.82
Total	**0.97**

To detect a correlation between dominance power, which is measured by the index of structural leadership, and the dominant firm's market share intertemporal change, the author divides the overall sample of Ukrainian asymmetric oligopoly markets into three groups by the value of the structural leadership index:

1) $1.5 \le k_{sl} < 2$;
2) $2 \le k_{sl} < 5$;
3) $5 \le k_{sl} < \infty$ (Table 1).

The average value of the index of the dominant firm's market share intertemporal change has been calculated for every group of markets that shows an inverse

3 The statistical base of the investigation is industrial concentration data for 580 Ukrainian industrial markets for the period 2006-2010, which is the result of monitoring by the Centre of Complex Research in the Field of Antimonopoly Policy (Kutz, Venger, Kireev et al., 2011)

relation between investigated variables. The higher the index of structural leadership, the more intense the erosion of the dominant firm's market power.

The search for reasons for the detected dependence results in the next conclusion. The further behind the competitive fringe firms follow the dominant firm, the more neglectful is the attitude of the latter to such potential competition. The dominant firm does not consider small firms of the competitive fringe as competitors, losing circumspection and easing barriers to competitive fringe expansion in trade for bigger economic profits. As a result it loses its dominance in the long run. At the same time, the dominant firm, whose competitors run it a close second, is apt to create and exploit the barriers to competitive fringe expansion. This allows them to not only withstand potential competition but also to increase their market share in the long run.

5. CONCLUSION

To summarise the above, a barrier to competitive fringe expansion, as well as other types of barriers to potential competition, is a significant factor in creating, maintaining, and strengthening the market power of the dominant firm. Its effective use lets the dominant firm create a sustainable source of economic rent, while neglecting it takes away not only the market power of the dominant firm but also its market niche, where a market power zone existed before.

Barriers to competitive fringe expansion are very close to those investigated in detail under the barriers to entry theory. As traditional entry barriers they can manifest in the field of price by using mechanisms of limit pricing, or in the field of investment by vertical integration, business diversification, and cross-subsidization, or in the product field by increasing product and place differentiation. There is a difference between the two types of barriers to potential competition: they are distinct in allocation of potential risk zones, where the dominant firm's market power is jeopardized and may disappear. Focusing on the risks of new entry while neglecting expansion of the competitive fringe can bring a dominant firm the same bad outcome as myopic pricing, or an even worse outcome because of the absence of high short-term economic profits. Thus taking into consideration the barriers to competitive fringe expansion by developing dominant firms' competitive strategy is a way to maintain and strengthen its market power in the current economy.

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