

ECONOMICS AND SOCIAL ECONOMIC GEOGRAPHY



SOCIALLY EFFICIENT ENTRY BARRIERS?

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Stagnation of the Russian economy lends a new urgency to the question of whether reserves of competition incentives can be used to overcome the current negative economic tendencies. The lowering of entry barriers is traditionally considered a universal instrument of promoting competition. However, lower entry barriers can be mistakenly associated with bringing the market closer to the state of the so-called 'perfect' competition. The authors aim to show that the absence of entry barriers does not improve competition in certain markets. On the contrary, it may result in a decrease in social welfare. This is particularly true of capital-intensive goods, for instance, large diameter pipes for gas pipelines. Lack of proper competition in such sectors of the market necessitates entry barriers, for they help to achieve a separating equilibrium at the market. Since there are costs associated with creating a separating equilibrium, it is necessary to assess both costs and benefits of the pooling and separating equilibria.

Key words: barriers to entry, competition policy, industrial policy, adverse selection, pooling and separating equilibria

Introduction

Unfavourable macroeconomic indicators caused by a combination of external and internal factors lend a new urgency to the problem of using the reserves of business competition incentives to overcome recent negative trends. Creating conditions for competition development and activating such incentives are typical features of the 'new' industrial policy [12] promoting pro-competitive regulation tools.

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Lowering barriers to entry — import [2; 10], administrative [1], and other barriers — is traditionally considered an effective pro-competitive measure. Measures to reduce barriers are a mandatory element of strategic documents on competition development [6; 14] and they are a permanent item on any economic policy agenda. Yet giving absolute priority to lowering barriers to entry and lacking a clear understanding of what barriers to entry are (a result of an erroneous interpretation of the basic model of perfect competition and its prerequisites and opportunities) can have negative consequences.

Perfect competition is considered as a benchmark not only in theory but also in practical, for instance, political decision-making. By default, such approach does not have an explicit form. This position — rather harmless when theoretical issues are discussed — can lead to problems and significant losses for individual groups of market players and the society in general. However, this does not exclude redistribution effects in favour of certain market players that otherwise would not be part of the market or would have entered it much later.

The absence of barriers to entry is a key feature of perfect competition. Technically, easy entry ensures effective resource allocation, since it prevents companies from setting long-term prices exceeding marginal cost to create a situation when established companies generate economic rather than accounting profit. Thus, the absence of barriers to entry looks like a promising economic policy tool used to create necessary conditions for competition.

This work aims to explain that the above considerations can be erroneous and they can have a negative effect on markets of certain goods.

The first section strives to answer the question of why barriers to entry sometimes do not have an adverse effect on competition and trade performance and when such barriers are necessary to achieve efficiency following the second-best principle. The second section considers a hypothetical situation in a market of complex capital-intensive products — large-diameter pipes (LDP). LDPs are used in the construction and maintenance of major gas pipelines. This industry provides sufficient material for a detailed study into the ‘tuning’ of barriers to entry. In less than two decades, Russia made a transition from 100% imports of LDP for major gas pipelines to a market that is almost balanced in terms of domestic production. This was the result of an entry of four new producers. The most urgent question is whether there is a need to increase the production capacities of companies working in the Russian market. Should this be a result of an entry of new players? What risks will such a policy pose to LDP production¹?

¹This question is lent urgency by the appearance of new players — Liskimontazhkonstruktsiya, Zagorsky Pipe Plant, and Turboporm — in the market of LDPs used in oil and gas pipelines. The state provided support for the constructing of new production facilities. Liskimontazhkonstruktsiya and Zagorsky Pipe Plant are included in the List of Comprehensive Investment Projects in Priority Areas of Civil Industry [5] and they enjoy different forms of public support. According to expert estimates, in 2015, the existing production capacities were sufficient to accommodate increasing demand. As to the production of thick sheets using 5000 mills, the capacity utilisation is close to maximum [4, p. 24].

1. Mixed effect of barriers to entry on competition and trade performance

For a long time, economic theory considered barriers a synonym for inefficiency. Williamson [7, p. 579] emphasised an increasing tendency to view any barriers to entry as harmful to public interest. This assumption left room for only one line of economic policy — lowering barriers if they could not be eliminated.

Why do barriers sometimes not have a negative effect on competition and trade performance? The general idea is that assessing competition requires examining both current functioning of the market and its long-term development prospects. Analysing long-term prospects is often the only way to trace a decline in qualitative parameters of competition if an assessment of current performance leads to a different conclusion.

Economic theory has developed models proving that barriers to entry are not always inefficient from the perspective of public welfare (see, for instance, [20, p. 478]). Economies of scale or a differentiated product will lead to an increase in public welfare in many situations if there are barriers to entry into a market [28]. In case of economies of scale, which are considered a source of barriers to entry in Bain's interpretation [16], a market consisting of several firms with a high operating rate is more publicly efficient than a market comprising many firms with a low operation rate. In case of differentiated goods, premium for reputation — reputation being, according to Bain, another source of barriers to entry — can become an incentive to enter the market and stimulate newcomers to uphold required quality standards.

Farrell [18] demonstrates that in the markets of experience goods, a newcomer has an incentive to offer low-quality products. A rational customer who is aware of this risk will refuse to work with a new supplier. Newcomers' incentives to display opportunistic behaviour and supply low-quality goods (moral hazard) depend on the time of entry into the market. Grossman and Horn [21] argue that, in a markets of experience goods where established players have a reputation and newcomers do not, the attempts to support newcomers by grants does not only fail to eliminate moral hazard but also it can contribute to adverse selection and, thus, lead to a reduction in public welfare. Another study [17] shows that unrealistic optimism in newcomers, which has been described within behaviour economics and observed in experiments, prevents entrants from a correct assessment of market opportunities for profitable functioning. As a result, new entries into a market can be excessive.

As the above studies demonstrate, the two major causes of inefficiency of further entries — and thus two sources of the need for effective barriers — are the erroneous estimates of market needs (the entry is excessive) and problems associated with identifying the quality of goods (the entry is a consequence of unfair competition and it distorts market equilibrium).

Below, barriers to entry will be described (1.1) and a typology of goods (1.2) and features of entrant behaviour depending on characteristics of goods (1.3) presented.

1.1. Barriers to entry

To a first approximation, barriers to entry can be described in terms of costs that prevent companies from entering a market. On the other hand, barriers to entry emphasise a certain asymmetry in the position of established firms and those outside a market. It is assumed that there are no barriers to entry in most cases with the exception of a closed monopoly. However, when entering a market, companies are not guided by a comparison of earnings and costs.

Today, there is no unanimous — or even prevalent — opinion among economists as to the definition of barriers to entry. At the same time, barriers to entry constitute the central problem of theory of market organisation. In particular, McAfee et al. [24] analyse seven definitions most widely used in economic literature. It is established that none of them is sufficiently clear or operational.

Some definitions interpret barriers to entry as any costs borne by a firm to enter a market. This approach is used by Bain [16, p.3], who emphasises that incumbents can use barriers to set and hold prices that exceed costs. According to Bain, barriers to entry are ‘an advantage of established sellers in an industry over potential entrant sellers, which is reflected in the extent to which established sellers can persistently raise their prices above competitive levels without attracting new firms to enter the industry’.

Others definitions interpret barriers as costs borne by an entrant but not an established firm. Consider Sigler’s definition [27, p.67] — ‘a cost of producing that must be borne by a firm which seeks to enter an industry but is not borne by firms already in the industry’.

It is easy to see the difference between these definitions. If a market has a certain quality standard that applies to all players, costs associated with meeting these requirements will be considered barriers to entry in the first case and will not be deemed as such in the second.

An interesting definition is presented in a work by Franklin M. Fisher [19, p. 23] — a barrier to entry is ‘anything that prevents entry when entry is socially beneficial’. In effect, this definition acknowledges that the notion of ‘barriers to entry’ has a gratuitous negative connotation, whereas additional entries do not always result in an increase in public welfare. Thus, Fisher suggests that only those entry costs be called barriers that are harmful to the society, thus implying that there are such obstacles to entry that increase efficiency.

The concept of barriers to entry is of crucial significance for assessing the state of competition, which serves as an important indicator for making regulatory decisions. Thus, decree of the Federal Antimonopoly Service of Russia of April 28, 2010 No. 220 ‘On Establishing the Procedure for Ana-

lysing the State of Competition in Consumer Markets' (further referred to as Procedure 220) — the principal document regulating market studies for the purposes of antimonopoly law enforcement — pays significant attention to this issues. In particular, the Procedure 220 considered different types of barriers, including administrative, economic, and strategic ones. All else being equal, higher barriers to entry mean a higher probability of restricted competition.

For the sake of further discussion, it is important to stress that barriers differ depending on the way a company enters a market.

The first case is the creation of production facilities from scratch as a result of fixed investment. A new market player joins the existing ones.

The second case is imports. A producer that has necessary characteristics to be included into a market can have experience in manufacturing the product in question in other geographical markets. Here, the number of players increases but the production output does not (i.e. there is no fixed investment or the investment is sufficient only to launch trade operations).

The third case is the expansion of existing production capacities. The number of players does not change as it does in the first case and production capacities increase without new players, which does not occur in the second case.

Finally, the fourth case is the purchase of a functioning business (which can be an instance of capacity expansion) as part of diversification policy. In the first approximation, only the owner changes and everything else stays the same — at least, in a short-term perspective.

Below, we will consider the case of a new entry. In this situation, there are certain requirements for conformance of goods and the compliance with them is controlled through special procedures.

1.2. Typology of goods

Economic theory offers several criteria for classifying goods. Some of these criteria can prove useful in discussing the questions above. Firstly, it is costs associated with measuring a product's conformance. Such costs pose an obstacle to consumers awareness of the properties of goods².

Three categories of goods are identified based on this criterion (see, for instance, [13, pp. 283—284]). The first category is search goods. Getting an idea of their conformance prior to purchase and exploitation does not require significant spending. Strictly speaking, perfect competition — with all necessary reservations — is more applicable to this case than to any other, since information on the important conditions of a deal — features of a product — is available before the purchase. Obtaining and understanding such information does not lead to significant costs. Here, all goods with different features but similar functions would form different markets within the relevant product boundaries. The second category is so-called experience goods. Be-

² For instance, it is excludability and rivalry in consumption or substitutability and complementarity.

fore purchase and exploitation, costs associated with assessing a product's conformance are high (full costs, including the risk of obtaining a low-quality item). Finally, the third type of goods is so-called credence goods. A consumer cannot easily estimate the conformance of such goods even after the beginning (sometimes, even the end) of exploitation.

The above does not mean that no type of goods can be assessed before purchase and the beginning of exploitation. This only means that, for instance, assessing the quality of an experience good requires tests of an accurate sample conducted by experts using necessary equipment, which is of crucial importance in the case of mass production. Moreover, not all tests reduce the risk of obtaining low-quality items.

1.3. Moral hazard and adverse selection

The above classification makes it possible to identify a number of situations when trading goods in accordance with the perfect competition principles can lead to consequence that are less favourable than those that would arise otherwise. Note that, in this case, freedom of entry into a market means the absence or insignificance of barriers, whereas other conditions — for instance, perfect information — are not taken into account.

If the quality of a product is difficult to assess before consumption, the manufacturer can feel tempted to present low-quality goods as high-quality ones and set a higher price for them. In effect, such a player strives to use the reputation of established companies free of charge. However, for the latter, reputation is not a free good but rather a result of investment. This phenomenon is an instance of so-called moral hazard, whose effects and minimisation conditions have been discussed in economic literature over several decades. It develops in the following conditions:

- if customers do not have a reliable benchmark to range suppliers by the quality of produce;
- if an entrant is not ready for a long-term work in the market (or they hope to position the good differently in the future);
- if the technology cannot guarantee a high quality of *each* item and acceptable average quality can be a result of a wide dispersion in conformance characteristics of individual items;

In the third case, even purchasing a faulty product does not mean that the customer can reliably estimate whether the low quality of the time is a result of the supplier's negligence or this outcome is possible when using a cutting-edge technology. Mechanisms to resolve this problem include certification of both products and processes by a second or third party (for more detail, see [8]).

Adverse selection [15] is a result of opportunistic behaviour of sellers and it can be a by-product of the moral hazard problem. Let us imagine a situation when two competitors produce and sell the same good. Before exploitation, customers are not aware of the conformance of a certain item. However, there is information on the probability distribution of purchases of certain quality arranged by manufacturer or by batch. One seller cuts costs

and supplies a seemingly high-quality but, in effect, low-quality good (the problem of the test agent, methods, and costs requires additional discussion). The other seller does not cut costs and upholds necessary standards.

All else being equal, customers will be guided by the *expected* performance characteristics that are superior to those of a good offered by a negligent seller and inferior to those of a scrupulous manufacturer. Thus, the price a customer will be ready to pay for a good with *expected* performance characteristics will be profitable for the first manufacturer but not for the second one. The second manufacturer will incur losses. In such a situation, only negligent manufacturers might remain in the market, which is the essence of the adverse selection problem. This is an instance of a wide definition of a market within product boundaries, which is used for the purposes of antimonopoly law enforcement and is based — although implicitly — on the pooling equilibrium principle. The reason behind it is that buyers consider such goods as substitutes. Moreover, relevant discussions never address the behavioural component, which can be of significance in the absence of reliable information on probability distribution in a market where both low- and high-quality products are traded (in particular, this can be a case of unrealistic optimism).

In other words, *low barriers to entry and/or a broad definition of a market's product boundaries can be associated with the nature of contracts corresponding to the conditions of pooling equilibrium, whereas barriers to entry and/or a narrow definition of product boundaries with the conditions of separating equilibrium.*

Moreover, pooling equilibrium does not immediately suggest inefficiency. Sometimes contract administration is easier in such a situation and losses stemming from hidden characteristics are insignificant. In other words, it is important to consider at least three aspects: (1) the scale of distribution of products with hidden substandard characteristics; (2) side-effects of identifying quality faults during exploitation (for instance, in the case of an accident); (3) costs associated with creating and applying institutional mechanisms aimed to reduce the risk of purchasing a faulty product.

Therefore, adverse selection is a result of asymmetric information. Asymmetric information suggests that a buyer invokes contract terms in interactions with a counteragent (manufacturer) based on expected values rather than observed characteristics, which leads to cross subsidisation of low-quality producers by high-quality producers.

Another possible result is *deteriorating competition conditions despite a formal increase in the number of players and a reduction in market concentration* (this is often considered a relevant characteristic of the competition level). In a long-term perspective, forcing high-quality product manufacturers out of the market can result in even worse competition conditions. Such manufacturers can be forced out by established sellers that have changed their strategy towards economising on quality. As a result, customer gains will diminish and the market will degenerate.

Different methods are applied to overcome the problem of adverse selection. They involve creating special institutional mechanisms aimed at adjusting the incentives for sellers in such a way that a buyer will have an opportunity to distinguish between manufacturers of high- and low-quality products (separating equilibrium). However, the ultimate goal is to prevent suppliers of low-quality products from entering into a market (economic barriers to entry) and force them out of a market or localise them within a market with customers with lower requirements to product performance. The most popular method to solve the problem of information asymmetry is employing institutional mechanisms for market signalling and screening.

There are two important limitations to this discussion: (1) one should presume that one limitation to entry is never better than another one (there is no need to prove comparative effectiveness); (2) the absence of barriers to entry has advantages under certain conditions (a small and not increasing proportion of substandard produce and the absence of significant negative side-effects).

2. Barriers to entry into a market of complex capital-intensive products: The redundant and the necessary

A market where the above risks are posed by the product and production features is that of complex capital-intensive products. Recently, such markets have attracted attention of antimonopoly bodies. In 2011—2013, Russia's Federal Antimonopoly Service initiated two notable investigations in the markets of large diameter pipes for constructing major gas pipelines. The results were ambiguous [3; 11; 9]. The attention paid to this industry by regulatory agencies can suggest that competition in this market is considered underdeveloped (the correlation of perceived and actual competition is a problem that requires further research). This makes it possible to impose competition policy measures, including creating barriers. When applied to markets of complex capital-intensive products, in particular, LDPs, the above theoretical consideration will read as follows.

As a rule, new entries into a market or a threat of such entries are considered as a disciplinary factor that inhibits price growth and encourages incumbents to uphold quality standards, introduce innovations, etc. However, the existing LDP market data suggest that certain characteristics create a risk of negative effects from entry.

1. A market is balanced by internal production (even without the participation of importers) and there are significant economies of scale. In this case, a new entry will increase costs for all producers (the capacity utilisation will diminish) and lead to price growth. A new player can be unrealistically optimistic, which will lead to a failure and sunk costs will become another loss for public welfare. Although this hypothesis is not self-evident from the perspective of traditional models of market organisation theories, unrealistic optimism effects have been studied for a long time within behav-

journal economics [23; 25; 26; 29] and recently within market organisation theory [17; 22].

2. The quality of a product is difficult to estimate before consumption. In markets of experience goods, new players have an incentive to take advantage of the reputation of established companies, presenting low-quality goods as high quality ones and setting higher prices for them. This scenario is most probable in the case when buyers do not have special competences to assess the quality with reasonable transaction costs, nor do they have access to the assessments of independent companies. A number of characteristics are considered crucial for the pipe industry. These are the constrained yield stress, ultimate stress limit, permanent elongation, amount of absorbed energy, expanding coefficient, and out-of-roundness. For instance, deviations from permitted absorbed energy parameters can result in the destruction of dozens of kilometres of a pipeline if an accident takes place [8, p. 35—36].

In the short term, this can lead to a drop in prices but, in the long term, sellers of the highest-quality products will be gradually forced out of the market until only low-quality products remain. In such case, an industry can disappear with all its technology and it is needless to say that the costs of repairing the damage from using low-quality products can be rather high. This holds especially true for hazardous objects, such as major pipelines. Pipes are expected not only to withstand a pressure of several dozens of atmospheres³ but also to be resistant to an aggressive environment (extreme temperatures, saline water, and mechanical impacts).

There are different ways to limit new entries. However, limits to entry cannot be considered as a means to attain a desired level of competition. In other words, structural alternatives to limits to entry are not identical from the perspective of expected results. For instance, the requirement, that entrants should have a significant experience in supplying goods to a certain market or a certain customer, seems to contain a contradiction and it can serve as a negative example. One of the explanations is the artificial asymmetry between established and aspiring companies. Theoretically, there is a possible response — an entrant can purchase an established producer paying the latter part of the expected additional gain (this variant was described above).

Nevertheless, this gives rise to a question as to whether the history of relations between a certain supplier and a customer is of any significance. If it is not, all conditions should be unified. However, in this case, one must also agree that reputation does not mean anything. If it is, assessing concrete risks based on a supplier's past behaviour and current technology can become an important benchmark for differentiating relations with suppliers (in this case, differentiation does not equal discrimination). Of course, it is still necessary to answer the question as to whether such differentiation is admissible. Are there any separating benchmarks that meet minimum reliability requirements or one should bear the costs associated with pooling equilibrium? This ques-

³ In the Nord Stream, the working pressure can reach 200 atm. See, for instance, <http://www.gazprominfo.ru/terms/gas-main/>

tion is open to discussion, as well as that as to how to understand whether there is a need to change the existing requirements for information on product performance and conformance in the framework of complex projects and, if so, how and at whose expense.

Thus, preventing adverse selection requires distinguishing between:

- (1) differentiating practices relating to a producer's reputation in a relevant market (but not a supply history);
- (2) universal requirements applicable to all players (they can differ from those in other, for instance, foreign markets).

Conclusions

With a significant asymmetry of information between a customer and a supplier as to the product quality, the risk of adverse selection can have a dramatic effect on the assessment of effectiveness and desirability of barriers to entry into such a market. The more serious the possible consequences of deviations from the expected quality (for instance, in the case of an accident, which can be fatal at a hazardous object, such as a major gas pipeline), the more reasons there are to believe that information disclosure is economically justified. One indirect indicator, if any, is the cost of insurance. Such requirements are a key tool for achieving the so-called separating equilibrium. In such case, suppliers of substandard products can secure a certain niche but they will not be able to compete for orders with strict requirements. This phenomenon can be presented in terms of vertical differentiation of a product with unrequited differences in quality.

Achieving a separating equilibrium is not automatic. The market parameters described above require that a customer (the principal, non-informed party) take efforts to create incentives for a supplier (the agent, informed party) to act in line with the principal's actions. At a glance, both a customer and a seller of a high-quality product can benefit from a separating equilibrium. However, this poses the following questions:

- (1) how customers can understand that they are dealing with a seller of a high-quality product and
- (2) how separating equilibrium costs can be distributed — through creating necessary institutional frameworks, including earlier lacking infrastructure markets — to ensure independent quality control, monitoring, damage assessment, etc.

Analysing effectiveness of barriers to entry into complex capital-intensive product markets in terms of creating economic and industrial policy benchmarks suggests that, depending on market characteristics, certain barriers can ensure fair competition. Thus, an easy entry into a market and relevant public support will create a risk of industry degeneration from the perspective of public welfare.

However, it is also important to stress that an absence of barriers to entry can be beneficial in certain conditions. In particular, creating a system of barriers is not free. The corresponding costs should be borne by someone.

Cost distribution is also of significance. The costs should be compared against the possible negative consequences of the absence of barriers. It was shown in the case of the LDP market which aspects deserved increased attention in the context of competition and industrial policy measures aimed to overcome the problem of distorted incentives and optimise the transaction cost system relating to the assessment of product quality.

Although barriers to entry into markets have been extensively studied within market organisation theory, they have been rarely paired with the problem of pooling/separating equilibrium in the conditions of information asymmetry or that of competitive and industrial policy, which is extremely important for countries with a transitional economy. Studying barriers to entry within such contexts is a very promising area of research that can yield not only new theoretical models but also empirical estimates based on the material that is not adequate for such purposes.

Although this article focused on analysing discrete alternatives to effective barriers to entry in the context of emergence of new market players, an increase in the number of players is not the ultimate goal (as this work argues), nor is it the only way to develop an industry. If the government considers it necessary to support an industry, selecting suitable public support measures should include choosing between alternatives of a higher level. In particular, it is important to answer the questions whether only new players can count on support or established companies can also receive it and whether it is necessary to employ the mechanisms of a vertical industrial policy in view of its possible distortive effect on competition. Probably, better results can be achieved through pursuing a horizontal policy — although it can prove to be costlier. Finally, the logic of assessing regulatory effects suggests that any discussion of public support measures should be based on the principle of preferred governmental non-interference. This requires estimating gains, costs, and risks of preserving the status quo as another discrete alternative. The absence of a comprehensive assessments results in a risk of the ineffective use of public funds in the cases when problems could be solved without public support, as well as a risk of inconsistency between the chosen mechanisms and declared goals in view of potential indirect effects.

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