

COMPETITION AND COMPETITIVENESS IN PHARMACEUTICAL INDUSTRY

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Abstract

The aim of the paper is to present competition and competitiveness in the pharmaceutical industry. Their concepts and definitions are discussed. The types of competition and their application in the pharmaceutical industry are described.

The results of the paper define a wide range of definitions and relatively few quantitative criteria for measuring competition and competitiveness. The ability to use resources effectively is a common feature of both competition and competitiveness. Research and innovation are key to competition in the pharmaceutical industry, while policy by state for intellectual property forming competitiveness in the pharmaceutical industry.

Keywords: *competition, competitiveness, pharmaceutical industry*

JEL Codes: *C72, D25, E66, I15*

Introduction

The ability to use resources effectively is at the core of economics. The evolution of society can be viewed critically in terms of the ability of certain individuals to use resources wisely and foresight. It is precisely the comparison with the ability of other individuals in the use of resources that is considered the start of competition. Despite the fact that competition is constituted on a macro-level, modern theories pay attention to its application at the micro level due to the wide range of quantitative criteria in measuring competition.

The state's policy regarding the development of national firms and their positions at the international level is defined as competitiveness. The ability of firms to sell their products on foreign markets is based on the state policy for investment and innovation.

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Competition

The concept of “competition” has a long history and relatively few studies. The root of concept “competition” is from Latin language and reflects resources owned and the results achieved compared to other party. Borrowed from biology and anthropology, the concept goes into economics and, later, into management. At certain points in humanity's development, the concept of “competition” had been apply only in one sector of society, while modern applications have a broader scope, which makes it difficult to define and identify the concept. (Borisova, 2017).

An important tool for making strategic marketing decisions is the determination of the company's dependence on its competitors (Yaneva, 2017). In its emergence, competition is absolutely applied, i.e. only to two parties that are known to one another and participate simultaneously in the use of resources (Filipova, 2010). Competition refers to the most important elements of the market mechanism. Competition ensures synergies between market actors and stimulates more efficient economic development. (Dimitrova 2014) Competition is also a driving force for the development of sites and actors of government and of society as a whole. (Dimitrova 2012) The current understanding of “competition” concept is a consequence of the advent of another concept, “external environment”, and its determinants - resource scarcity and an option to achieve the result at the expense of eliminating the other party. In this regard, Filipova notes that „an expression of an enterprise's competitiveness is its adaptability, expressing the adequacy of its responses to the impact of the environment and complying the amendments to the dynamics of the environment.“ (Filipova, 2004) In the new reality, the concept of “competition” is use relatively - to an unknown number of parties that, in most cases, do not interact directly but have similar features and belong to the same reference group.

In this connection, Stankova and Kirilov indicate „When a tourist destination has competitive advantages, it is able to produce greater returns compared to its competitors and earn more profit to re-invest, thus ensuring long-term stability and superiority over competition in a given market. The available natural resources in Bulgaria can be such a source of competitive advantage and increase competitiveness based on its uniqueness (can competitors easily copy and implement it); flexibility (whether it can be easily adapted when the market or economic conditions change); added value (the extent to which it contributes to the added value of a product or service) and sustainability (how long it can sustain market dominance), implemented in the tourist offer of balneotourism.” (Stankova & Kirilov, 2017).

The definition of “competition” varies from the historical setting (Georgiev, 2013). For example, the opinion of European Commission and its vision of competition was extend. The competition in the EU before the onset of the global financial crisis was determine by four objectives for Common Market infrastructure (European Commission,

1994) - transport and energy networks, telecommunications, environment, trans-European networks. In new reality, the competition is changing both in number and in terms of objectives (European Commission, 2013) - maintaining export levels to guarantee industrial activity, improve the business environment, using the skills base of workforce, creating investment, reduce energy prices, access to finance, efficiency and effectiveness of public administrations as key to restoring economic growth. "The competitiveness of a product depends on the extent to which it satisfies the consumers' needs and on the efficiency of the processes that produce and maintain it." (Filipova, 2005)

Competition in the pharmaceutical industry is defined as a long-term balance between interdependent and conflicting goals (Statman, 1983). In addition to the traditional view of being a major driver of economic growth, a new application of competition, a discipline device, was being added (Swedish Agency for Economic and Regional Growth, 2017). Depending on the specifics and goals of the pharmaceutical industry, the competition has a distinctive function - to influence innovations and scientific researches (Nordic Competition Authorities, 2013). The overall function of competition is for pharmaceutical industry to provide affordable and innovative medicines at reasonable prices (European Commission, 2008). Unlike other sectors of economy, the competition in pharmaceutical industry is expanding and includes small and medium-sized enterprises (European Commission, 1996b).

For the sake of completeness, when considering competition in the pharmaceutical industry, should be included the pipeline products, i.e. products that are not yet on the market but are in an advanced stage of development after significant investment of time and funds (European Commission, 1995). Due to the high risk of supervisory approval and commercial success, it is accepted to consider products only in the last stages of clinical trials - only 1 in 10,000 compounds tested successfully reach the market and less than 10% of products transition to the clinical pathway, they are eventually marketed (Gatti, 1996).

The key importance of pharmaceutical industry to society defines the diversity of the term "competition":

- Competition between brands. It is a competition between new, patented and innovative medicines (therapeutic competition). At the heart of this competition is research to develop new therapies that go beyond existing medicines of another brand (Hancher, 2010). An additional factor for competition is the impact of patents and intellectual property rights, as well as the supervisory procedure for granting marketing authorizations. The effect of this type of competition is the tide of mergers and acquisitions, as well as joint research, licensing, co-marketing and joint distribution contracts.

- Competition within one brand. This competition is due to the import of cheaper medicines from other countries. It is being applied in the EU after another enlargement with new Member States, and due to differences in national health insurance and pricing

systems, incl. reimburse of health insurance schemes. The existence of this type of competition is justified by the principle of free movement of goods.

- Overall competition. Entry of generic and bio-similar medicinal products generate overall competition (Kirilov et al., 2019). The driving force behind competition is the state policy on access to medicines at an affordable price (Tonova, 2017). The effects of the global financial crisis and reduced health budgets increase implementation of this competition. The main criticism to competition is to keep the balance between allowing generic medicines and stimulating research into innovative products (Darakchiev, 2014). For example, misuse of patent protection or obstacles to genuine, fair competition with generic products (Economic and Social Committee, 2001). This competition is often reflect in researches at the interstate level - taking the lead from the USA compared to the European Union since the 1990s after increasing investment in biotechnology researches.

- Competition between medicines with or without a prescription, i.e. according to distribution channels and the choice of medicines use (Rohova et al., 2019). Over-the-counter medicines provide the public with access to medicines without the need for medical advice from a specialist (pharmacist and physician). This competition enhances the importance of the regulatory authority in ensuring the safety of medicines (European Economic and Social Committee, 2004). The effects of the global financial crisis and reduced healthcare budgets increase the market share of over-the-counter medicines (Galović, 2015). The second group, prescription (ethic) medicines, are competing for distribution through the participation of pharmacists and physicians as a distribution channel (Gergova, 2017).

- Competition between patent protected and unprotected medicines. The complex value chain in pharmaceutical industry needs new technologies and their stimulation (Kamusheva et al., 2013). Attracting investments to develop new medicines is guarantee by patents to recover investment costs and sell medicines at an affordable price (European Economic and Social Committee, 2014). Competition by non-patented medicines is express in medicines for which the patent period has expired and their price is reduce accordingly. This competition is express in the price between medicines with or without a patent. They are directly reflect in the budget of healthcare systems and the savings made from patent-free medicines were used to fund new medicines.

Competitiveness

The concept “competitiveness” is one of the most commonly used in the economics, but it is not sufficiently precise, which means that there is no commonly accepted definition (Siudek & Zawojcka, 2014). The development of competitiveness theory is accompanied by the formation of diverse views on its nature and content. (Dimitrova 2015) “Competitiveness” was introduce in the 1970s in American literature, proving commercial activity between USA and Japanese firms as consequence of the degree of

development of their national economies (Wziątek-Kubiak, 2003). For the EU, competitiveness is equate with the free movement of goods and skills for economic growth (European Investment Bank, 2016).

In the economic literature, competitiveness is determine by microeconomic indicators, of which the most commonly used are productivity, efficiency, and profitability (Ciampi, 1995). Achieving these indicators is neither an objective nor an end in itself, but a tool for improving macroeconomic indicators: raising living standards and social well-being, increasing individuals' incomes in a non-inflationary manner, increasing added value and growth potential, stimulating innovation and attracting investments, saving resources, expanding capacity and creating jobs. Unlike traditional macroeconomics, competitiveness has a long-term focus and to balance macroeconomic indicators. Regardless of the political system of a country, opinions are align in the leadership role of firms for competitiveness because of their role in delivering economic growth through job creation and productivity gains (European Commission, 1996a). The perception that overall competitiveness is manifested as a steadily sustained increase in productivity, resulting in increased incomes and improvement of living standards, and that it is Formed on the basis of the creation of a higher value, by increasing productivity, improving the quality of the offered products and innovations, appears to a large extent unifying in the scientific literature in this subject are. (Dimitrova 2014) Therefore the study of the substance and the content of competitiveness must be bound to the specific level to which the analysis relates. At a subjective level, competitiveness is manifested and investigated as:

- Macro-competitiveness –national competitiveness of a country;
- Meso -competitiveness –competitiveness of the region, industry, sub-sector, cross-industry complexes and corporations;
- Micro-competitiveness –competitiveness of individual enterprises and individual entrepreneurs.

On the object level the competitiveness of individual products is studied; technologies, information and infrastructure, etc. (Dimitrova 2013) Dimitrova points out those competitive advantages are central to the process of shaping and developing the competitiveness of the enterprise. (Dimitrova 2014) A key point in competitiveness research is the fact that each enterprise operates in a specific competitive environment. (Dimitrova 2012)

Based on the above definitions, it can be argued that the competition is a rivalry among economic agents in order to achieve their goals through the most efficient use of resources, maximize profit, achieve higher market share, etc. This is done within the conditions of interaction among the entities and in accordance with the local competition protection legislation (Borisova & Peneva, 2018).

For the sake of completeness in presenting competitiveness, we will look at its main forms:

- Competitiveness at micro level. In chronology, competitiveness has emerged at the firm level, and paradoxically, there are currently no scientifically accepted models for measuring it (Porter, 2004).

The modern view of competitiveness is the ability of firms to mobilize and effectively use the productive resources needed to successfully realise their goods and services in a global economic environment (European Investment Bank, 2016). According to this formulation, competitiveness at micro level is a factor for achieving macroeconomic indicators - a high standard of living and long-term sustainable growth of gross domestic product. To create and maintain an enabling environment for competitiveness, government policy is crucial to ensuring an appropriate regulatory environment, such as stimulating investment for innovation and benefits for small and medium-sized enterprises (Yuleva, 2019). I.e. competitiveness is characterized by the interaction between elements of the micro level and the macro level. The companies use innovation as a strategic, system and technology lever to develop flexible innovative cultures, responsible business management processes and global ecosystems. This ensures that their employees develop creative credibility; Self-confidence and belief, the ability to invent creative ideas, and the courage to try and co-operate to influence the desired changes in the world around them. (Stavrova, Zlateva, Pinelova & Vladov, 2018, p. 99)

Research reflects a dynamics at which profit is lost as an element of firm competitiveness (Madgerova & Kurova, 2014). Since the 1990s, determining competitiveness has been associated with an appropriate price¹ and maximizing profits². In the new reality, firm competitiveness is seen as a balance between financial motives and client's needs, i.e. constant adaptation to social norms and economic conditions (Chikán, 2008). In the long run, these two goals should be aligned and not contradictory.

In the pharmaceutical industry, firm-level competitiveness is determined by specialization in the complex value chain. Unlike other sectors of economy, in which forward integration is a goal, i.e. towards the client, the competitiveness in pharmaceutical industry is expressed in the initial stages - development of new medicines and clinical research. The firms in these stages determine the competitiveness of the firms in the other two stages - production and distribution. The need for large investments, protection of intellectual property and patents, as well as the high risk of reaching the end product to the market determine the importance of the state policy for access to funds, incl. financial incentives for firm competitiveness (Gergova et al., 2017). Given the nature of scientific and research processes in the first stages, firm competitiveness

¹ Department of Trade and Industry (UK) defines the competitiveness of firm as an opportunity to produce adequate goods and services at the right time and at the right price (Department of Trade and Industry, 1994).

² Organization for Economic Co-Operation and Development defines the competitiveness of firm as an ability to compete, maximize profits and achieve growth based on costs and prices through use of technology, quality improvement and maximizing the impact of its products (OECD, 1992).

research covers small and medium-sized enterprises in the start-up segment that are subcontracted or future target for merger by leading firms in the pharmaceutical industry. In order to achieve high levels of competitiveness, firms undertake offshoring and backshoring.

- Competitiveness at macro level. Classical economics compares the advantages of individual countries to produce products and sell them outside the national market (Siudek & Zawajska, 2014). For the period XVIII-XX centuries, the theories explain the reasons why countries are free to participate in international trade (Houbenova, 2009). At a later stage, the neoclassical economy introduces competitiveness to a micro level.

The term “competitiveness” is sufficiently clear at the micro level, while at the macro level it becomes “more elusive” (Reinert, 1994). Despite the existence of several definitions of competitiveness, which are often cited in the specialized literature, these definitions remain “unsatisfactory”.

Competitiveness at macro level is difficult to measure, as the underlying factors are numerous and highly interrelated (Department for Business, Innovation and Skills, 2012). The World Economic Forum, Davos, links competitiveness at micro and macro level: “a set of institutions, policies and factors that determine a country's level of productivity” (Schwab, 2017).

Modern theories determine the competitiveness of a country through its components: (1) sustainability production, (2) whose products are successfully sold in foreign markets, and (3) proceeds from the sale increase the standard of living of residents. The most comprehensive definition of competitiveness at macro level is by the OECD: the degree to which a nation can, under free trade and fair market conditions, produce goods and services that meet the test of international markets, while simultaneously maintaining and expanding the real income of its people over the long term (OECD, 1992).

Another wing of theories rejects the applicability of the concept of competitiveness to a country and regards competitiveness as a meaningless expression when applied to national economies (Keremidchiev, 2008). Paul Krugman rejects national competitiveness at macro level and believes it can lead to protectionism (Krugman, 1994). Michael Porter believes that the only meaningful concept of competitiveness at national level is national productivity (Porter, 1990). The basis for such claims is that countries compete for market share differently from firms. In this regard, Kirilov states that „In order to have a clear market competitiveness the public and private sectors need to work closely together and support each other“ (Kirilov, 2018).

The pharmaceutical industry is based on high R&D costs, big innovation investment needs and increased risk of the complex value chain (Todorova, 2019). These three characteristics of the pharmaceutical industry determine its competitiveness at macro level. A similar position is in the European Commission's 2014 report: “A viable European pharmaceutical industry is important for European public health, economic growth, trade and science” (European Commission, 2014).

The research-based pharmaceutical industry makes a major contribution to the prosperity of the global economy. This industry is one of the pillars of industrialized economies. In addition to economic development, the pharmaceutical industry is active in the international dissemination of medical technology (International Federation of Pharmaceutical Manufacturers and Associations, 2012).

Conclusion

Attempts to identify and measure competition and competitiveness at the micro and macro levels have failed. One explanation is that these terms do not originate from economic theory but from politics (Balcerowicz & Sobolewski, 2005). Despite the fact that these terms are used in the economics, the recommendations in this regard are to use a wider range of tools such as a social capital (Nedeltchev, 2004).

The link between the micro and macro levels is that the presence of competitive firms determines a competitive economy and on the other hand, the competitiveness of the national economy has a strong impact on the competitiveness of firms (Chikán, 2008). At both levels, competitiveness is defined as an opportunity, which is directed to sustainability.

The interaction between competition and competitiveness is receiving increasing attention in the light of globalization and its implications for sustainable economic growth and well-being (United Nations Conference on Trade and Development, 2002). The impact of competition to achieve and maintain competitiveness is on the agenda of politicians in addition to economists. On the one hand, firm competition contributes to the competitiveness of the national economy, and on the other hand, competitive infrastructure at the national level determines firm competitiveness. Increasing corporate competitiveness makes it possible to overcome national weaknesses, such as finance and innovation, and access international resources. The process of globalization removes the link between the geographical origin and the markets of the firm's activity.

Competitiveness in the pharmaceutical industry is determined by the ability to carry out researches and innovations, i.e. to a large extent, state policy determines the level of competitiveness. Competition in the pharmaceutical sector is determined by the ability to generate products as intellectual property, i.e. is largely determined at the micro level.

In some cases, competition can be defined as creative cooperation. The role of state in determining competition is to reduce and increase in competitiveness. Firms can influence their own competition, while their competitiveness requires the assistance of the state.

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