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THEORETICAL AND METHODOLOGICAL ASPECTS OF THE ANALYSIS OF IMPERFECT COMPETITION IN THE CONTEXT OF DIGITALIZATION

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Abstract:
This article examines the theoretical and methodological aspects of the analysis of the market of imperfect competition in the context of digitalization. Special attention is paid to the transformation of classical forms of competition under the influence of digital technologies, including platform models, algorithmic pricing and the role of big data. the need to update methodological analysis tools that take into account network effects, information asymmetry and digital infrastructure. Conclusions are made about the need to adapt competition policy to the challenges of the digital economy.

Keywords: Imperfect competition, digital economy, market structures, analysis methodology, platform markets, network effects, digital transformation.

Introduction

Modern economic theory recognizes that most real markets function in conditions of imperfect competition. In contrast to the model of a perfect market, where it is assumed that there are many sellers and buyers, absolute awareness of participants and free entry into the market, in real practice there are deviations from these idealized conditions. Monopoly power, limited access to new firms, product differentiation, and information asymmetry all form a space of imperfect competition, which is the subject of special attention in both theoretical and applied research. With the development of digital technologies and the transition to a new phase of economic relations, designated as the digital economy, the mechanisms of market interaction have undergone significant changes. The emergence of digital platforms, online markets, algorithmic pricing and big data have created qualitatively new conditions for competition and, at the same time, for limiting it. New forms of market power are emerging, not always obvious from the point of view of classical models. This requires a rethinking of the existing theoretical and methodological approaches to the analysis of imperfect competition. The purpose of this article is to study the theoretical foundations and methodological tools for analyzing markets with imperfect competition, taking into account the challenges and features of the digital era. The paper reveals the evolution of scientific ideas about this category, analyzes the key forms and mechanisms of imperfect competition, and also focuses on the changes that have occurred under the influence of digitalization. Particular attention is paid to the need to adapt analytical approaches and regulatory strategies to the new conditions formed by digital transformations.

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The phenomenon of imperfect competition occupies a central place in the research of modern microeconomics. Its formation as an independent subject of analysis is associated with the need to explain the deviations of market behavior from the idealized model of perfect competition. Historically, the basic ideas about competition as a process of free rivalry between a set of economic agents go back to the classical political economy of Adam Smith and David Ricardo. However, already in the late 19th and early 20th centuries, scientists began to realize that a significant part of real markets is characterized by a limited number of participants and manifestations of market power. The systematization of scientific views on imperfect competition began with the works of A. Marshall, who laid the foundations for the analysis of partial equilibrium in the conditions of a monopolistic and oligopolistic structure. A significant contribution to the theoretical development of this problem was made by E. Chamberlin and J. Robinson. Chamberlin introduced the concept of monopolistic competition, in which many producers offer differentiated products, combining elements of both competition and monopoly. Robinson, in turn, developed a theory of monopoly power and the factors influencing the formation of entry barriers and non-price competition.

Later, theoretical thought focused on the study of the strategic behavior of firms, especially in an oligopoly. Here, a significant achievement was the game theory proposed by J. von Neumann and O. Morgenstern, which made it possible to model the interaction of companies as rational agents in conditions of interdependence. The models of Cournot, Bertrand, and Stackelberg have become classic tools for analyzing the behavior of firms with a limited number of market participants.

Modern approaches to the study of imperfect competition include not only structural analysis, but also elements of behavioral economics, institutionalism, and contract theory. Attention is paid to such categories as information asymmetry (J. Stiglitz, M. Spence), transaction costs (R. Coase, O. Williamson), the theory of bilateral markets (J.-C. Rocher, J. Tiroll), as well as platform business models.

Thus, the evolution of the theoretical understanding of imperfect competition demonstrates a movement from simplified models to more complex and realistic concepts that can explain the behavior of economic agents in conditions of limited competition, product differentiation and heterogeneity of information. This theoretical basis is necessary for the subsequent analysis of the transformation of competitive mechanisms in the context of digitalization, where classical forms of competition are gaining new manifestations and require rethinking taking into account digital realities.

In economic theory, there are several forms of imperfect competition, each of which reflects a certain level of restriction of the freedom of market rivalry and the presence of market power in individual subjects. This typology is based on such parameters as the number of sellers and buyers, the degree of product differentiation, the presence of barriers to entry and exit from the market, the level of price control and the degree of information asymmetry. **Monopoly** is an extreme form of imperfect competition, in which there is a single producer on the market who fully controls the supply of a

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particular product or service. In such conditions, the market price is determined not by the interaction of supply and demand, but by the monopolist's decisions based on profit maximization. initial investment, economies of scale). **Oligopoly** is characterized by the presence of a limited number of large firms, each of which has a significant market share. Market behavior within an oligopoly is subject to high interdependence: the decisions of one firm affect the actions of others, which generates strategic interactions. These relations can be expressed both in aggressive price competition and in non-price forms of rivalry (innovations, advertising, service support). **Monopolistic competition** is a model in which a large number of manufacturers offer goods that are similar in purpose, but differ in certain characteristics - design, quality, packaging, brand. Product differentiation allows firms to set their own pricing policy within the local market segment. **Bilateral and multilateral markets**, which have become relevant in the digital economy, also fit into the paradigm of imperfect competition. In them, the platform acts as an intermediary between different groups of users (e.g. sellers and buyers), and success depends on the coordination of the interests of both parties.

In general, it is possible to identify the key characteristics of imperfect competition, manifested in all of the above forms:

Figure 1 – Key signs of imperfect competition

These characteristics create conditions under which market equilibrium is not achieved automatically, as in the model of perfect competition, but requires active intervention, both on the part of the participants themselves and on the part of regulatory institutions. This feature is of particular importance in the context of digitalization.

The digitalization of economic processes has radically changed the institutional architecture of market interactions, affecting not only value chains, but also forms of competition. Imperfect competition in the digital age is being shaped by new factors that are transforming traditional market institutions, such as access rules, transparency

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standards, legal protections, and regulatory procedures. First of all, digital transformation strengthens the role of intangible assets and intellectual property as an institutional basis for the formation of market power. Technological patents, data processing algorithms, unique software solutions and customer bases are becoming key factors of competitive advantage that are inaccessible to potential participants without significant investment and time costs. Thus, barriers to entry into the market acquire a digital and legal nature. In addition, in the digital economy, the effect of network asymmetry is increasing, when the value of a product or service directly depends on the number of users. This leads to the formation of a sustainable competitive advantage among early and fast-growing participants. An institutionalized environment is emerging in which companies with access to big data, algorithmic demand forecasting models, and significant computing power can dominate the market without clear signs of monopoly in the classical sense. The next important factor is information asymmetry, which is amplified in the digital environment. Platform users generally do not have a sufficient understanding of ranking algorithms, data processing conditions, and pricing principles. This reduces the level of market transparency and makes it difficult to form full-fledged competition on the demand side. At the same time, platforms can use the behavioral data they receive to tailor personalized offers, thereby creating unequal access to products and services. A significant institutional shift has also been the blurring of the boundaries between markets, when digital ecosystems simultaneously cover various industries, from trade to logistics, from education to finance. This creates complex configurations of competition, in which it is impossible to apply traditional norms of antitrust regulation, since dominance occurs not within one product market, but within the digital space covering many functions and roles.

In the context of digitalization, traditional methods of antitrust regulation, focused on controlling market share and pricing policy, are losing their effectiveness. Modern forms of imperfect competition are increasingly manifesting themselves not in the form of price collusion or explicit access restrictions, but through algorithmic pricing models, user flow management and non-discretionary forms of market segmentation digital platforms and the formation of a sustainable competitive environment. **One of the key areas** is the development of regulatory institutions of digital law that are able to quickly respond to the challenges of the transformed market architecture. In many countries, special regulations are being developed and implemented regarding the transparency of algorithms, big data processing and ensuring digital ethics. An example is the initiatives on the "explainable AI principle", according to which digital platforms are obliged to disclose the logic of personalized offers and dynamic pricing. **In** contrast to the traditional approach, in the digital context, market power can be concentrated not only within a single company, but also within a multi-service ecosystem that provides comprehensive control over distribution channels, payment infrastructure, advertising flows, and logistics platforms), which reduces the risks of vertical integration and makes it difficult to limit competition. **The third** mechanism is the institutionalization of the principle of "open APIs", which provide third-party access to the data, services and

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functionality of digital platforms. This helps to reduce barriers to entry, stimulates innovation and expands consumer choice. This approach is especially important in sectors where the concentration of technological infrastructure makes small players dependent on the decisions of dominant companies. The development of digital literacy as an institutional mechanism also acts as a deterrent to market power. The formation of a conscious and critically thinking consumer reduces the risks of manipulative behavior on the part of platforms, contributes to more rational decision-making and increases the resilience of market mechanisms to algorithmic distortions. It is also necessary to emphasize the importance of international coordination of antitrust policy, especially in the context of the cross-border nature of digital markets. The lack of uniform standards and regulations creates institutional "gaps" that can be exploited by platforms registering in jurisdictions with a low level of regulation. Strengthening international cooperation, harmonizing norms and developing interstate digital control mechanisms are becoming integral elements of effective competition.

In the context of digitalization, the market of imperfect competition is undergoing qualitative changes associated with the strengthening of the role of platforms, data and network effects. This requires a revision of theoretical approaches and methods of analysis, as well as the development of new regulatory mechanisms. Modern realities emphasize the need to adapt competition policy to the challenges of the digital economy, with an emphasis on maintaining a balance of interests of all market participants.

REFERENCES

1. Marshall A. Printsipy ekonomicheskoi nauki [Principles of Economic Science]. Moscow, Progress Publ., 1993.
2. Chepurin M. N., Kiseleva E. A. Kurs ekonomicheskoi teorii [Course of Economic Theory]. — Kirov: "ASA", 2021.
3. Tirole J. The Theory of Industrial Organization. — MIT Press, 1988.
4. Belleflamme P., Peitz M. Industrial Organization: Markets and Strategies. — Cambridge University Press, 2015.
5. Shapiro C., Varian H. Information Rules: A Strategic Guide to the Network Economy. — Harvard Business Review Press, 1999.
6. Evans D. S., Schmalensee R. Matchmakers: The New Economics of Multisided Platforms. — Harvard Business Review Press, 2016.
7. OECD (2020). "Market Concentration in the Digital Economy".
8. Furman J. et al. (2019). "Unlocking Digital Competition: Report of the Digital Competition Expert Panel".
9. Zuboff S. The Age of Surveillance Capitalism. — PublicAffairs, 2019.
10. UNCTAD (2021). Digital Economy Report 2021: Cross-border data flows and development.

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