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JEL L66, M11, O33

ECONOMIC APPROACH IN THE BUSINESS PROCESS ENGINEERING SYSTEM OF FOOD INDUSTRY ENTERPRISES IN DIGITALIZATION CONDITIONS: MAIN ASPECTS AND MECHANISMS

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Introduction. The complexity of implementing an economic approach in the state regulation of food industry enterprises is driven by several factors, ranging from the need to ensure sustainable development and minimize risks to meeting social responsibility and high safety standards. The impact of global economic challenges, resource shortages, and increasing consumer expectations regarding quality and product safety all require a reassessment of regulatory approaches. Traditional methods of control and oversight are no longer adequate for the demands of the modern market, creating a need for economically sound yet flexible mechanisms that can account for the specificities of the industry while meeting both national and international requirements.

Analysis of recent research and publications. The essence, characteristics, advantages, and disadvantages of the economic approach have been studied by the following national and foreign experts: Smith A. [1], Ricardo D. [2], Keynes J. M. [3], Adamovska V. S. [4], Chumak O. V. [5], Shaporenko O. I., Farzaliyev E. E. [6], Boychuk R. P. [7], Senyshyn O. S., Horyn M. O., Kundytskyi O. O. [8], Tretyak H. S., Blyschuk K. M. [9], and Matviyenko I. V. [10], Bruneel J., Ratinho T., Clarysse B., Groen A. [11]. However, the issue of defining the key aspects of the economic approach, mechanisms, tools, and international experience in the context of state regulation of food industry enterprises has not been previously addressed.

Objectives of the article. Definition and analysis of key aspects of implementing the economic approach in the state regulation of food industry enterprises. Identification of the most significant mechanisms and tools that ensure the effective functioning of food industry enterprises in the modern market, as well as determination of possible directions for their improvement. Special focus is placed on integrating the economic approach into the engineering of business processes under digitalization conditions, highlighting tools such as fiscal incentives, subsidies, and public-private partnerships to optimize production efficiency and competitiveness.

The main material of the study. The development of the food industry today is a critical factor in ensuring food security and economic stability for the country. In the context of globalization, increasing product quality standards, and growing competition in international markets, the role of an economic approach in the state regulation of this sector has become particularly relevant. Ensuring sustainable development, attracting investments, stimulating innovation, and adapting to changing market conditions require new regulatory approaches that balance economic efficiency, environmental standards, and social needs. Therefore, researching key aspects and mechanisms that facilitate the implementation of an economic approach in regulatory practices is essential, especially in the context of the digital transformation of the food industry.

Let's consider the essence, features, advantages and disadvantages of the economic approach in fig. 1.

As shown in Figure 1, Adam Smith in his work The Wealth of Nations laid the foundations of modern market economics, formulating the concept of the "invisible hand" that regulates economic activity through supply and demand. His emphasis on the importance of individual interests and economic incentives, including profit and competition, shaped the view of the market as a self-regulating system where entrepreneurial freedom is the main driver of economic development. David Ricardo, building on Adam Smith's ideas, highlighted the

importance of international trade and taxation in his work Principles of Political Economy and Taxation. His theory of comparative advantage became a cornerstone of modern international trade theory, explaining why countries specialize in producing goods in which they have the greatest efficiency.

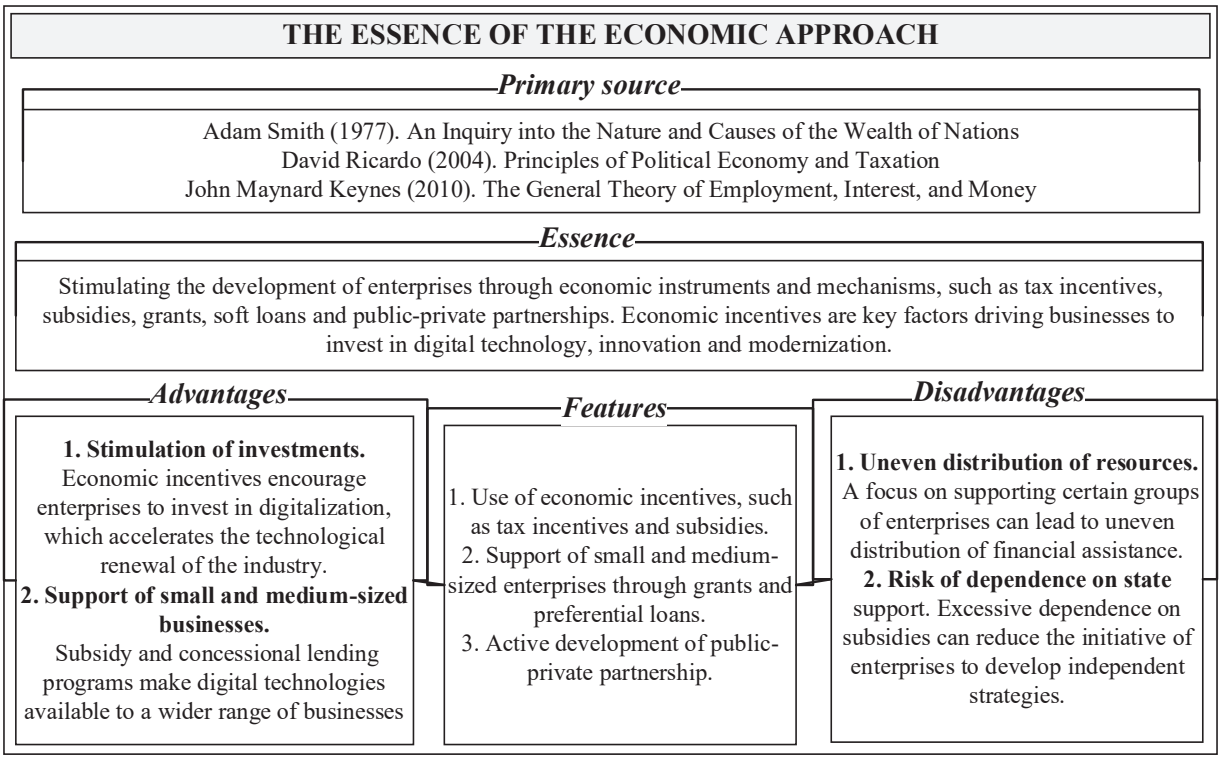

Figure 1. The essence of the economic approach

Source: [1–3]

This contributed to a deeper understanding of globalization and the impact of trade on economic development. John Maynard Keynes, in his work The General Theory of Employment, Interest, and Money, emphasized the necessity of government intervention to ensure economic stability and prevent crises. His ideas on stimulating the economy through fiscal and monetary policy formed the basis of Keynesian economics, which is applied to regulate economic cycles and stimulate investments. Thus, the definitions of the economic approach by Adam Smith, David Ricardo, and John Maynard Keynes underscore the importance of market mechanisms, government incentives, and the role of state intervention. For the food industry, this implies the need to support innovation through financial incentives such as tax benefits and subsidies, which foster the integration of advanced technologies and enhance competitiveness. The economic approach to digital transformation serves as a strategic tool that stimulates business activity and encourages the modernization of food industry enterprises through investments in innovation and digital technologies. The use of economic incentives, including tax benefits, subsidies, grants, and preferential loans, creates favorable conditions, particularly for small and medium-sized enterprises, helping them adapt to new market challenges. This primarily facilitates the faster implementation of advanced technologies, which improve production efficiency and enable companies to be more competitive both domestically and internationally. Developing public-private partnerships is especially important, as it enables the pooling of resources and state expertise with private sector processes to achieve common goals in digitalization. Such cooperation strengthens the economic impact of investments and reduces the financial burden on individual enterprises, ensuring a more effective transition to the digital economy. However, there are certain risks of uneven resource distribution, where some enterprises receive greater support while others may be overlooked. Additionally, excessive reliance on government incentives could reduce entrepreneurial initiative, as companies may come to expect external support instead of actively seeking their own development opportunities. Therefore, a clear strategy for resource allocation and encouragement of independent investment initiatives from businesses is necessary for the successful implementation of the economic approach.

Let's consider the key elements of the economic approach and their interaction in Fig. 2.

According to the data in Figure 2, the economic approach to stimulating digitalization processes is one of the key tools that enables accelerated technological renewal of the food industry, enhances its productivity, and contributes to economic growth.

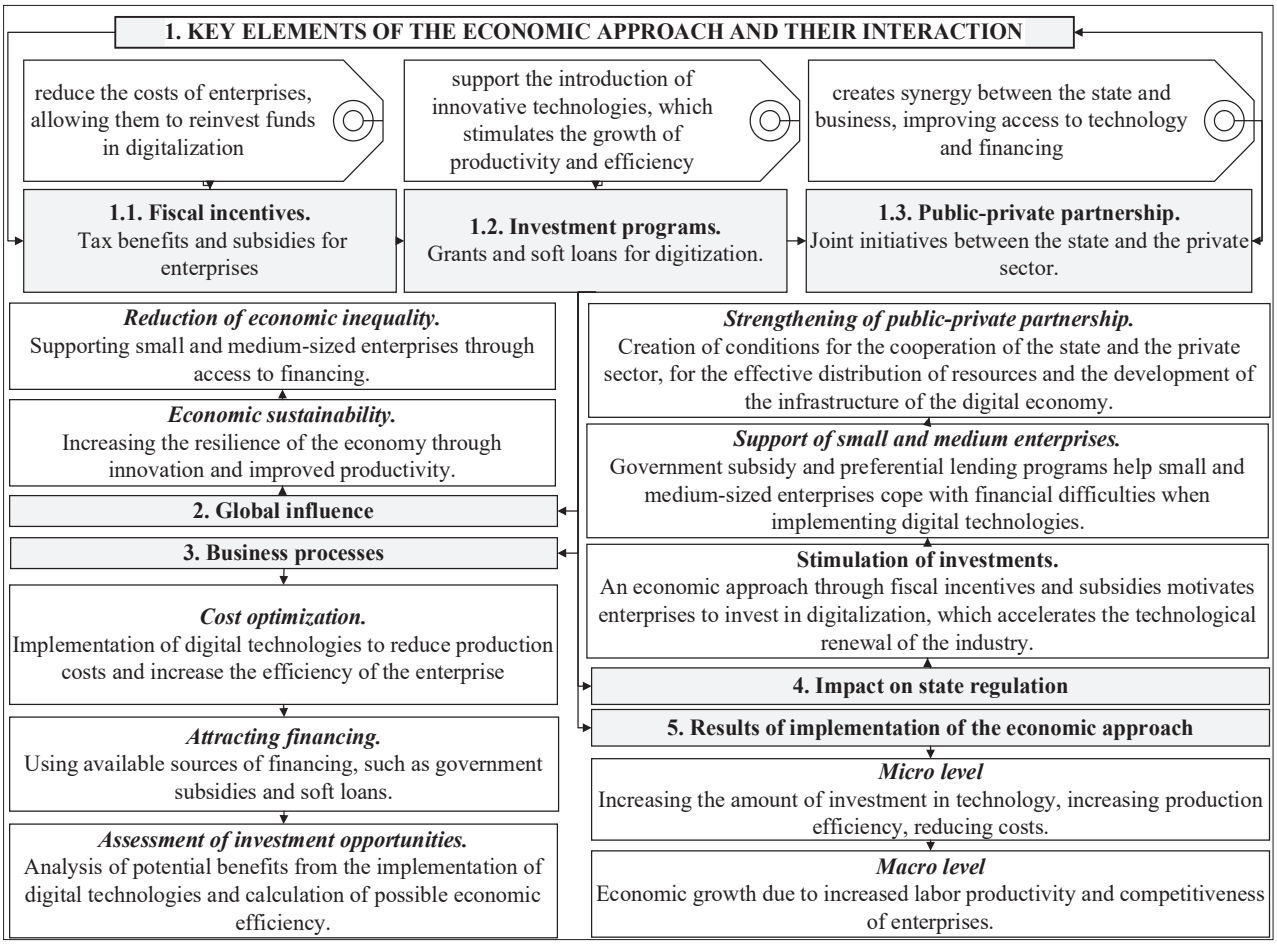

Figure 2. Key elements of the economic approach and their interaction

Source: [1–5]

The main elements of this approach are fiscal incentives, investment programs, and public-private partnerships, each of which has a significant impact on the economic dynamics of the industry. Fiscal incentives, tax benefits, and subsidies play a crucial role in reducing costs for food enterprises, allowing them to reinvest the savings into digital technologies and tools, which primarily accelerates the adoption of innovations. Investment programs in the form of grants and preferential loans support the technological renewal of even small food enterprises, helping to bridge the gap between large companies and smaller market participants. Public-private partnerships are also important, as they create synergy between the state and businesses, improve access to new technologies and financing, strengthen the infrastructure of the food industry, and foster more stable economic conditions. The outcomes of the economic approach are evident at both the micro-level, where enterprises increase investments in digitalization and reduce operational costs, and at the macro-level, promoting overall economic growth through enhanced productivity and improved competitiveness in the international market. Additionally, the global impact is significant, as economic resilience is strengthened through innovations, and economic inequality is reduced by supporting small and medium-sized enterprises. However, among the identified risks is dependency on government support, which may weaken food enterprises' initiative for independent development. Achieving a balance between government support and business independence is crucial for ensuring stable development, while the successful implementation of the economic approach relies on how effectively enterprises, the state, and market mechanisms interact, providing equal access to resources and technologies.

Let's consider the peculiarities of the implementation of the "Economic Approach" models in Fig. 3.

As shown in Figure 3, the implementation of the economic approach is carried out through two complementary models: "Fiscal Incentives" and "State Subsidies". The goal of these models is to create conditions for active digital transformation of businesses by combining tax benefits and state financial support. The "Fiscal Incentives" model is based on Adam Smith's classical economic principles, focusing on the use of tax instruments as benefits for investors who invest in new technologies. This includes reduced profit taxes for food industry enterprises investing in digitalization technologies and tax credits for research and development (R&D). The application of these mechanisms reduces the overall financial burden on food industry enterprises, allowing them to allocate resources toward the development of automation tools, digital platforms, and innovative technologies.

The key element of the "Fiscal Stimuli" model is subsidy programs aimed at infrastructure development and VAT exemption for the purchase of modern equipment, which primarily promotes the implementation of new digital solutions.

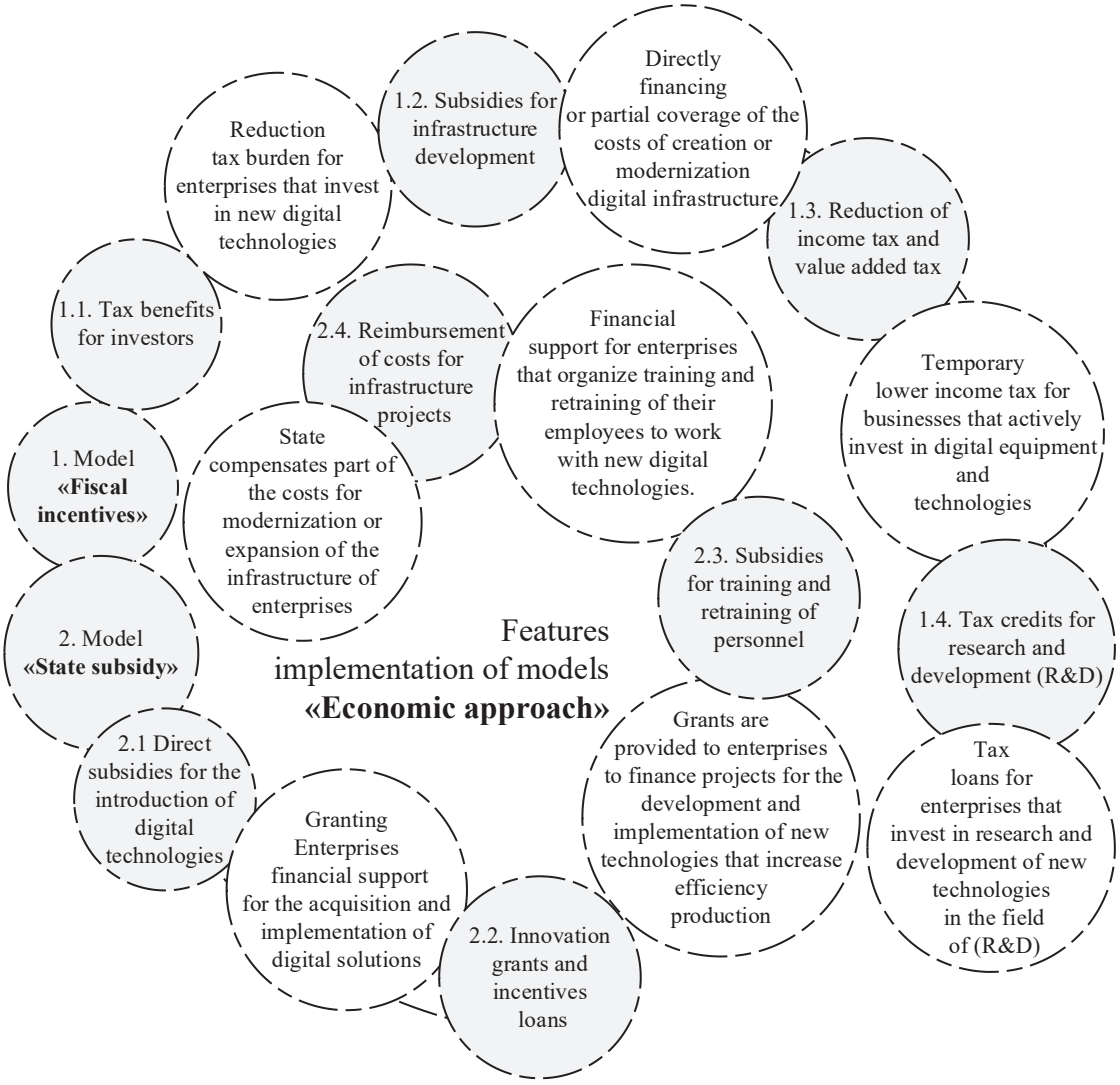

Figure 3. Features of the implementation of the "Economic Approach" models

Source: [1–5]

This enables food industry enterprises to reduce costs associated with modernizing their production processes and significantly accelerate the execution of these processes, providing additional incentives for adopting advanced technologies. In parallel, the "State Subsidization" model, based on Keynesian principles of active government intervention in the economy, provides broad financial support to enterprises striving to modernize their production processes through digital technology implementation. Subsidies for digital solution

adoption primarily help lower the cost of implementing modern digital technologies for small and medium-sized food enterprises. Grant programs for innovative projects, offered on a competitive basis, encourage the development of new technologies and enhance the competitiveness of companies in the national market. Another important element is concessional loans for small and medium-sized businesses, giving them access to cheaper financing for digital transformation projects. Subsidies for employee training and retraining are aimed at equipping workers with skills to operate new technologies, focusing on improving labor productivity and overall outcomes for the food enterprises where they work.

Let's consider the "Economic aspect" of state regulation of food industry enterprises according to the structure of "Fiscal policy", Fig. 4.

According to the data in Fig. 4, fiscal policy in the food industry plays a key role in promoting innovation and production modernization, particularly through tax incentives, subsidies, and investment incentives. The "Tax Incentives" element primarily aims to reduce the tax burden for companies that implement and use digital and innovative technologies. However, there is a risk of misuse of these financial incentive programs by businesses, which may lead to further losses in government revenue. The "Subsidies and Grants" element enables companies to grow even in the absence of their own resources; however, bureaucratic obstacles and corruption can hinder the efficient allocation of funds. The "Investment Incentives" element helps attract capital to the food industry, though political instability and high risks may further deter investors.

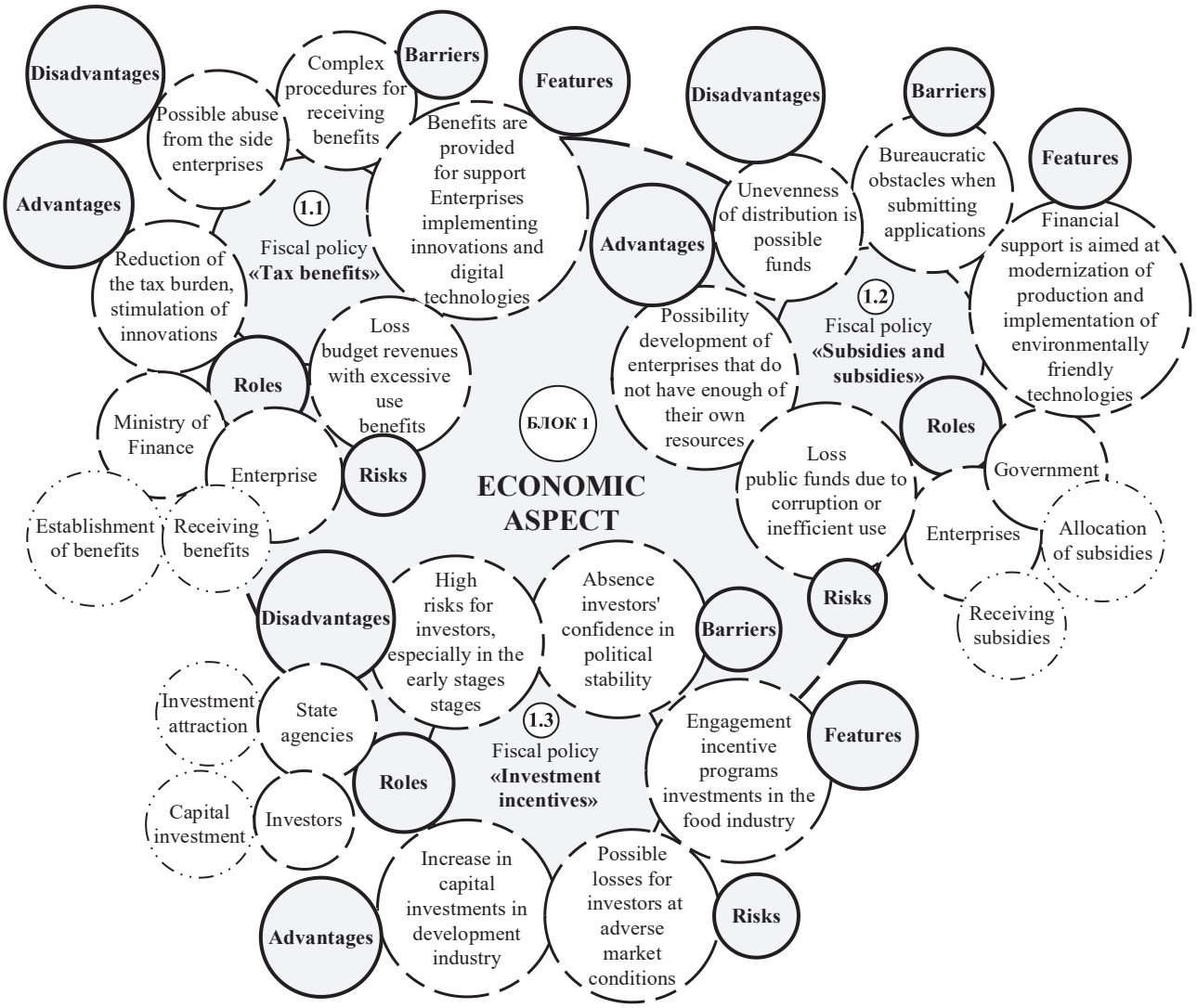

Figure 4. "Economic aspect" of state regulation of food industry enterprises according to the structure of "Fiscal policy"

Source: [4–10]

Thus, despite the advantages of such financial incentive programs, there is an urgent need for clear regulation to avoid inefficient use of resources and reduce future risks to the economy.

Let's consider the "Economic aspect" of the state regulation of food industry enterprises according to the structure of "Market Regulation", in Fig. 5.

As seen from the data in Fig. 5, the element "Government Intervention in Pricing", implemented through the antitrust committee, plays an important role in curbing inflationary processes, allowing for stable market prices. However, such intervention can also negatively affect producers by limiting their profitability.

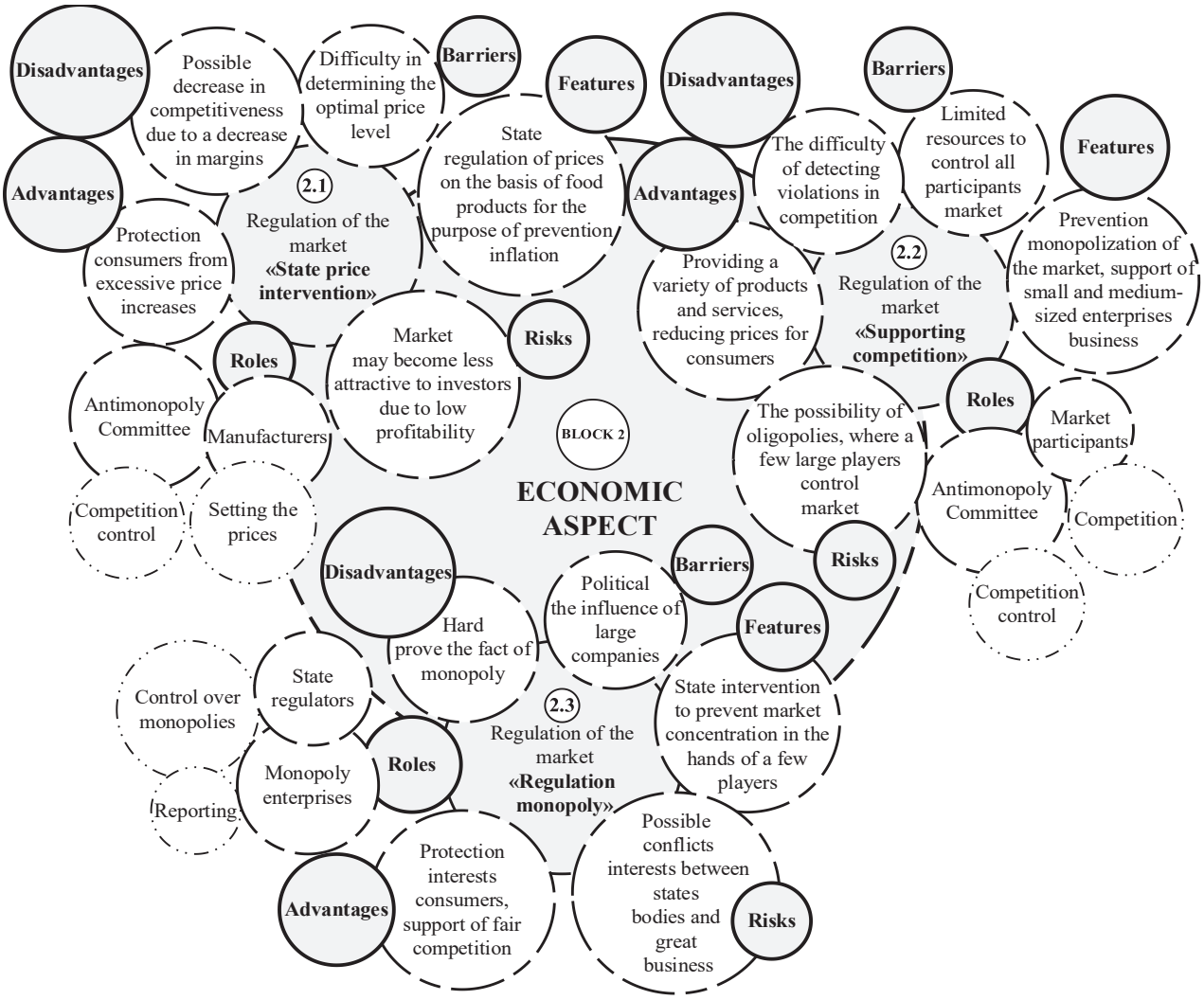

Figure 5. "Economic aspect" of state regulation of food industry enterprises according to the "Market Regulation" structure.

Source: developed by the author based on [4–10]

A gradual decrease in profits impacts their motivation to invest in expanding production capacities and further implementing innovations, which could ultimately affect their operations and competitiveness. As a result, the market becomes less attractive for new entrants who could bring fresh ideas, innovations, and new technologies to the food industry. Equally important is the "Support for Competition" element, which is a key goal of government regulation. However, limited resources within antitrust authorities often hinder effective execution of this function, leading to a risk of oligopolies forming, where a few large companies effectively dominate the market, control prices, and restrict growth opportunities for small and medium-sized enterprises. This situation negatively affects overall market dynamics and limits consumers' access to a wider range of products. The "Monopoly Regulation" element is concerning due to political pressure from large companies, which significantly complicates the effective implementation of control programs and creates situations where the interests of big business outweigh those of

the market. Although the goal of government intervention is to protect the market and create fair competition conditions, excessive or ineffective intervention can have the opposite effect, reducing market dynamics and making it less attractive to investors looking to invest in the development of the food industry.

Let's consider the regulatory instruments under the category "Preferential lending for the development of fast commerce" and "Subsidy programs for digitalization of the food industry" in Fig. 6.

As shown by the data in Fig. 6, the category "Preferential Loans for Rapid Commerce Development" serves as an important tool for food industry enterprises that critically need to implement new business models to adapt to the emerging demands and trends in rapid commerce. Among key financial support tools, preferential lending stands out, providing sufficient funding for logistics, digital technologies, tools, and platforms that allow enterprises to respond quickly to consumer demand. The SBA program in the United States was highlighted as a successful example of support for small businesses and serves as a model for integrating similar approaches in the domestic food industry market. To ensure a synergistic effect within the "Preferential Loans for Rapid Commerce Development" category, it is recommended to use SAP Loans Management and FintechOS program solutions, which are integrated credit management automation platforms that combine ERP systems and artificial intelligence to create digital financial solutions, enhancing the efficiency and flexibility of lending operations. This category's business processes involve enterprises applying for preferential loans, banks assessing their creditworthiness, and determining whether funds will be invested in their development. In this context, the state acts as a regulator, ensuring equal access to financing and overseeing the proper use of allocated resources.

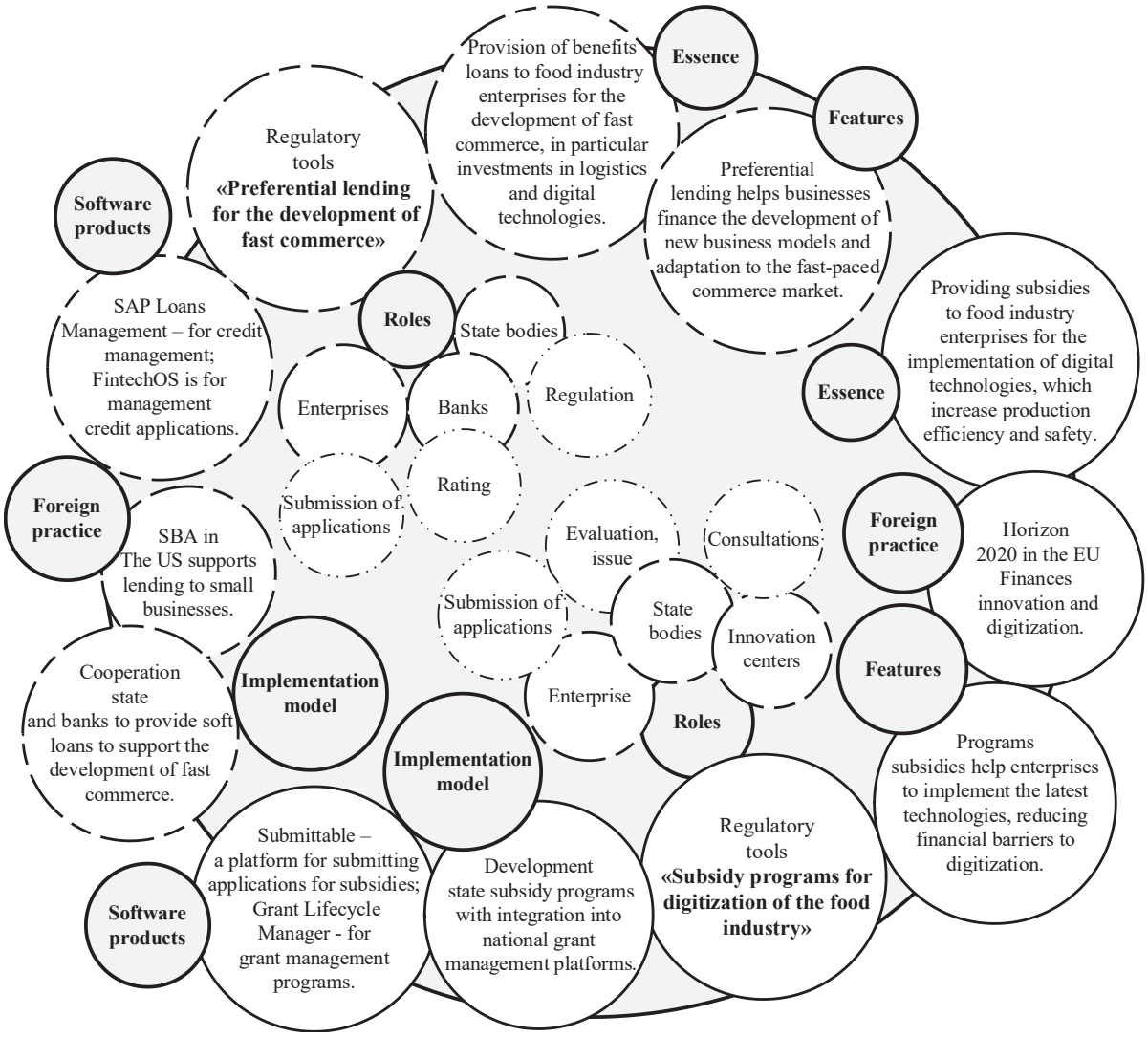

Figure 6. Regulatory instruments by category "Preferential lending for the development of fast commerce" and "Subsidy programs for digitalization of the food industry"

Source: [4–10]

The category "Subsidy Programs for Food Industry Digitalization" is aimed at the adoption of modern technologies by providing financial support to enterprises, primarily focused on lowering the barriers to implementing digital solutions, which is especially crucial for small and medium-sized enterprises. Among European support programs for food enterprises, "Horizon 2020" is notable, as it supports innovative projects in the food industry, promoting advanced technology adoption, eco-friendly production, and enhancing the competitiveness of companies on a global level. Among software solutions that will complement and monitor financial resources, it is advisable to use Submittable and Grant Lifecycle Manager. These tools will help effectively manage the application and distribution process of subsidies, allowing government bodies and enterprises to interact more efficiently. In this setup, the interaction between enterprises, government agencies, and innovation centers is realized through mechanisms for submitting applications, evaluating more attractive innovative projects, and subsequently monitoring the use of allocated funds. Thus, measures within the categories "Preferential lending for the development of fast commerce" and "Subsidy Programs for Food Industry Digitalization" jointly contribute to creating a balanced support and control system for the food industry in the context of digitalization, strengthening interactions among government agencies, businesses, and technology platforms.

Let's consider the mechanism of state regulation according to the structural element "Supporting innovations through accelerators and business incubators" in Fig. 7.

As shown by the data in Fig. 7, accelerators and incubators have become key mechanisms for fostering innovation, providing startups not only with financial support but also with access to strategic resources and expertise. Through these platforms, small businesses gain the opportunity to accelerate the development of their products and scale them into market-ready solutions capable of thriving in highly competitive environments. The use of accelerator programs like Y Combinator and Techstars, as well as agri-tech incubator platforms like Plug and Play AgTech, aids in addressing regulatory requirements during the development of technologies and products for e-commerce. A major advantage of these platforms is their ability to support the rapid growth of startups, helping them adapt to market demands and regulatory standards. However, participating in accelerators and incubators comes with its own barriers, including high competition, access to programs and substantial resources needed for launch, and challenges in meeting regulatory requirements, all of which create significant hurdles for startups.

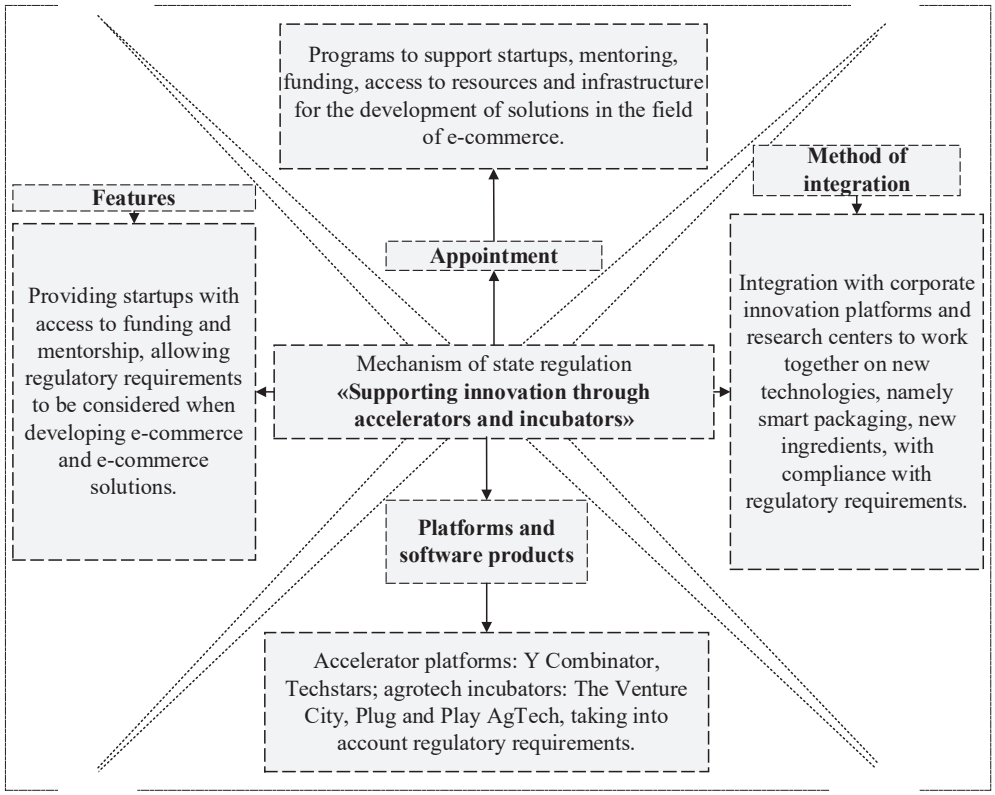

Figure 7. Mechanism of state regulation by structural element "Innovation support through accelerators and business incubators"

Source: [11]

Regarding the integration of startups with corporate innovation platforms and research centers, this not only accelerates the development of new technologies but also makes the process more targeted and efficient. Through this type of partnership, startups gain access to expertise, resources, and infrastructure that enable them to bring new innovations to market quickly.

Conclusions. The study examines the features of implementing an economic approach in the state regulation of food industry enterprises, focused on promoting sustainable development through the adoption of digital technologies and innovations. The importance of fiscal incentives, investment programs, and public-private partnerships as key mechanisms to ensure the competitiveness of enterprises in both national and international markets is emphasized. The article also highlights the role of tax benefits and subsidies in reducing costs for modernizing production processes and facilitating the quicker adoption of modern technologies. The role of accelerators and business incubators in supporting startups and small enterprises is specifically noted, as they help these businesses grow and adapt to market and regulatory requirements. The identified risks and challenges include dependency on state incentives, potential reduction in entrepreneurial initiative, and the threat of oligopolies forming. The study underscores the necessity of developing a clear resource allocation strategy to balance state support with business independence. Successful implementation of the economic approach requires effective cooperation between the state, businesses, and market mechanisms to ensure equal access to resources and technologies, while also enhancing overall productivity and the economic resilience of the industry.

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JEL L66, 033, M11

Oleksandr Oliinyk, Candidate of Philosophical Sciences, Associate Professor, Zaporizhzhia National University. **Economic approach in the business process engineering system of food industry enterprises in digitalization conditions: main aspects and mechanisms.**

The article examines the features of the economic approach in regulating food industry enterprises, taking into account the challenges of the modern market and industry specifics. It is studied that the use of fiscal incentives, tax breaks, subsidies and public-private partnerships contributes to sustainable development, increased competitiveness and faster adaptation to the global market. Particular attention is paid to the digital transformation of the industry, which requires flexible state support, especially for small and medium-sized businesses, as well as the introduction of preferential lending instruments, grants for innovation and R&D programs. The importance of integrating the economic approach into business processes and the risks of dependence on state support, which can reduce the independence of enterprises, is emphasized. A comprehensive regulatory model is proposed that combines innovation, equal access to resources and support mechanisms to increase the sustainability and competitiveness of the industry in the international market.

Ключові слова: economic approach, digital transformation, state regulation, food industry, economic aspects, accelerators, incubators, subsidies, preferential lending, engineering, business processes.

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Олійник Олександр Миколайович, кандидат філософських наук, доцент, Запорізький національний університет. **Економічний підхід в системі інжинірингу бізнес-процесів підприємств харчової галузі в умовах цифровізації: основні аспекти та механізми.**

У статті розглянуто особливості реалізації економічного підходу в державному регулюванні діяльності підприємств харчової промисловості з урахуванням сучасних викликів та специфіки галузі. Визначено, що застосування економічного підходу підвищує конкурентоспроможність, підтримує сталий розвиток і допомагає підприємствам адаптуватися до нових умов глобального ринку. Проаналізовано теоретичні засади економічного підходу, зокрема фіскальні стимули, податкові пільги, субсидії та державно-приватне партнерство, які є важливими для успішного розвитку галузі. Особливий акцент зроблено на цифровій трансформації харчової промисловості, яка потребує гнучкої державної підтримки, особливо малого та середнього бізнесу. Підкреслюється важливість інтеграції економічного підходу в інжиніринг бізнес-процесів для забезпечення сталого розвитку підприємств харчової промисловості в умовах цифровізації. Використання податкових пільг і субсидій допомагає компаніям швидше адаптуватися до змін ринку та стимулює їх до впровадження сучасних цифрових рішень. Серед основних інструментів – пільгове кредитування, гранти на інноваційні розробки, науково-дослідні програми та платформи цифрового ціноутворення, які оптимізують бізнес-процеси та підвищують ефективність виробництва. Підкреслюється важливість державно-приватного партнерства як механізму об'єднання ресурсів як державного, так і приватного секторів, створення синергії для забезпечення довгострокового економічного зростання. Одночасно визначено наявність ризиків потрапляння підприємств у залежність від державної підтримки, що може знизити їх ініціативу до самостійного розвитку. Пропонується комплексна модель регулювання, що поєднує фіскальні стимули та субсидії для підвищення ефективності інвестицій у цифровізацію та інновації. Рекомендації сформульовано для забезпечення рівного доступу до ресурсів для всіх галузевих підприємств, особливо малих і середніх, а також для сприяння інноваціям через акселератори та бізнес-інкубатори. Це підвищить загальну економічну стійкість і конкурентоспроможність харчової промисловості на міжнародному ринку, що є вирішальним чинником сталого розвитку національної економіки.

Keywords: економічний підхід, цифрова трансформація, державне регулювання, харчова галузь, економічні аспекти, акселератори, інкубатори, субсидії, пільгове кредитування, інжиніринг, бізнес-процеси.