State Regulation of Banking Business in the Context of Social and Digital Transformation of the Economy

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Abstract
The main purpose of the study is to analyze the main aspects of state regulation of the banking business in the context of social and digital transformation. One of the key elements of the functioning of the economy of any country are banks that ensure the redistribution of financial resources and stimulate economic growth. However, the banking sector, like other activities, is dynamic and depends on the pace of development and forms of technological progress that affect the forms and types of information and digital technologies, as well as the globalization and remoteness of banking services. Accordingly, the need for effective implementation of the latest technologies becomes relevant, which will not only help increase consumer satisfaction with the banking product, but also ensure the development of the country's financial sector. As a result of the study, trends in the development of state regulation of the banking sector in the digital economy were identified.
Key words:
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1. Introduction

The concept of digitalization should be defined as the practical transformation of processes or objects that are initially (partially or completely) physical or analog, into their full or partial conversion into digital ones, that is, based on discrete signals. The effect of digital transformation, in addition to potentially increasing efficiency, is that it makes the facility more adaptable and flexible to modern conditions of technological development, which allows increasing the level of customer satisfaction and the availability of any services [1].
The latest elements of the financial system, known as FinTech, are based on the widespread use of digital technologies in the sale of financial services. In the banking market, their activities and product offerings include banking (including mobile payments), personal loans (P2P), insurance, and even financial advice, which have historically been considered part of a comprehensive traditional banking service. FinTech companies are focusing on three main retail banking segments where there is an opportunity to close the gap between customer expectations and financial institution satisfaction. The development of these business models is based on such basic characteristics as accessibility, transparency, ease of attracting customers, ease of use of financial instruments and banking services, attractiveness to the client, as well as compliance with the original specialization [2].

Today, the financial industry is paying more and more attention to the ideas of digital ecosystems and platforms specific to FinTech. Relatively recently, banks began to introduce the creation of financial supermarkets, where a wide range of products and services was presented to the client, not only banking, but also offers of companies cooperating with the bank. A certain approach will be beneficial and profitable for all parties involved: for customers, for the banks themselves and their partners, who were able to scale the sale of their products at the expense of customers of financial institutions. In addition, banks have been able to reduce the costs of traditional positioning of their own services and customer service, as well as create additional sources of revenue generation by developing new products and modifying them in accordance with the modern environment.

One of the forms of digitalization in the banking sector is the creation of a financial ecosystem, which acts as a logical continuation of the main activity of the institution, and is also a method for solving existing problems related to the efficiency of the main activity of the institution in the traditional form, through its transfer to the Internet. This is also implemented using mobile applications, chat bots, online assistants, etc. Today, the transition to a digital

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world has become a common trend for all market participants [3].
Based on the above aspects of the modern digitalization of the banking sector, an important task is to study the main aspects and mechanisms of public administration of the banking business in the context of the social and digital transformation of the economy.

2. Methodology

To achieve the goals and solve the tasks set, the following research methods were used in the work: systemic, scientific abstraction (in the study of the essence, hierarchy and constituent elements of the banking business system, effective interaction between domestic and foreign banks), historical, logical (in the study of the current state and genesis digital transformation of the banking business and its state regulation in the world, identification of development trends), induction and deduction (to identify the features and patterns of the digital transformation of the banking business, obtain conclusions and provide recommendations on mechanisms and models for regulating the activity of state regulation of the banking sector in the context of digital transformation) , analysis and synthesis (for understanding the integrity of the banking sector system as an economic object, determining its functions, principles and types), economic and statistical (for assessing the development of the banking sector in in the context of digital transformation, tossing of regulatory instruments by state bodies), tabular, graphical (for a visual reflection of the identified trends, dependencies and patterns of state regulation of the banking sector in the context of digital transformation).

The information base of the study is the legislative and regulatory legal acts of foreign countries, EU directives, information and statistical materials, other public authorities and administrations, official reports and materials of the International Monetary Fund (IMF), the World Bank (WB), the Basel Committee on Banking Supervision, monographs, publications of authors, scientific-methodical and reference literature, materials of banks, Internet resources.

3. Research Results and Discussions

The inefficiency of the banking activity is manifested in the failure to fulfill the functions assigned to it and causing economic crises. The state should prevent such situations in the banking sector, both at the level of individual banks and in the system as a whole. Negative trends in the banking system of the state are fraught with general economic instability.

The risk of such situations can be reduced due to the implementation of consistent state regulation of both the economy as a whole and the banking sector in particular. Since overcoming banking crises cost the governments of countries much more than their prevention, therefore, in many economically developed countries, preventive means of regulating the banking system are preferred.

The banking system supports the smooth functioning of the country's economy, servicing cash and non-cash payments, storing funds of legal entities and individuals, providing them with credit resources and many other types of operations. Banking is characterized by a high degree of risk, because banks operate under the constant threat of losing money and bankruptcy. Therefore, the fight against risks is an important task for the entire banking system, and ensuring banking security becomes the cornerstone of the mechanism for ensuring the financial security of the state [4]. The existing problems in the banking system in modern conditions are exacerbated as a result of the rapid development of the information economy, which is radically changing the payment landscape of entire countries and threatening the existence of the banking system as such in our usual sense. The situation, which is objectively difficult for banks, is exacerbated by the fact that the transition of the economy to digital rails in the world is carried out at a very fast pace, leaving banks with virtually no choice. Those institutions that want to stay on the market must quickly adapt to a fundamentally new reality [5].

Thus, banks are forced to integrate into the digital ecosystem, including the gradual abandonment of cash transactions, the development of new types of payments and transfers, the introduction of mobile applications, contactless payments, online lending, electronic money, etc. Under the influence of these processes, the world is gradually merging "classic" banks and fintech companies, because only such a merger in the future can meet the growing requirements and rapidly changing and transforming needs of customers.

Generalization of specialized scientific literature on state regulation of the banking sector has made it possible to establish that modern science highlights certain indicators of the success of state regulation of the banking business in the context of social and digital transformation of the economy (Table 1).

Table 1: Indicators of the success of state regulation of the banking business in the context of social and digital transformation of the economy

№	*Indicator*
1	ensuring a sufficient level of capitalization of the banking system;
2	ensuring its profitability and profitability;
3	ensuring liquidity of the banking system; ensuring a balanced structure of national and foreign exchange assets and liabilities;
4	ensuring competition and financial inclusion; ensuring the development of the e-infrastructure of the country's banking system and new areas of the information economy in the banking sector: cashless payments, electronic credit platforms, the cryptocurrency market.

At present, the regulatory framework for banking regulation, established at the level of national legislations of countries, although they differ quite a lot, at the same time have a common basis, largely based on international standards. One of the key areas of legal support for the transformation of banking regulation was the introduction of international standards recommended by the Basel Committee on Banking Supervision, which were gradually transformed from Basel I to Basel III. [6-7]

An analysis of the regulatory framework, as well as public declarations of world regulators in the banking sector, allows us to identify the following goals [8]:

1) Ensuring sustainable development and stable functioning of the banking sector as a whole and its individual representatives in the interests of the development of the national economy. As a rule, providing conditions for the implementation of efficient banking activities is achieved through the regulation of its main aspects (for example, requirements for the amount and quality of capital, assets, and others).

2) Minimization of systemic risk, that is, the risk of failures in the banking system caused by the bankruptcy of one or a number of banks. The theoretical propositions justifying the expediency of state support for the largest banks experiencing financial difficulties (the term “too big to fail” is common in the English-language literature is too big to fail) was developed by French economists J. Tyrol and J. Sh. Roche. The authors argue that the spread of economic stress from a troubled bank to its counterparties through interbank lending can cause a chain of subsequent bankruptcies (systemic risk), which requires intervention from central banks and authorized agencies.

3) Protecting the interests of depositors, creditors and other economic agents.

4) Minimizing the risks of fraud, as well as the involvement of banks in criminal activities, for example, in schemes for tax evasion, laundering of proceeds from crime.

New phenomena in the economy, including its information support and the use of new technologies, have a great impact on banking. The importance of a strategic choice and the search for new priority business development models, including those related to the development of digital technologies, is growing even more. By using better technologies, banks are able to reduce costs and increase revenues, and customers, in turn, often get better conditions from their use than before [9].

As a rule, digitalization results in the creation of new electronic services or digital platforms. One example of such a platform is "challenge.gov", where government agencies can report problems and expect possible solutions from citizens. As studies on open innovation portals show, acquiring this kind of knowledge can be very rewarding. Another example is the fixmystreet.com complaint system, which allows people to report road maintenance depots about potholes and other road maintenance issues. This saves agency workforce, provides more information about the infrastructure, and can provide a faster response to a published issue [10]. Another example is "peertopatent.org". On this platform, citizens have the opportunity to view pending patent applications. The reviewer may inform the US Patent Office if the patent application contains already patented or published knowledge. A third example is Texas Border Patrol, which is a real-time Mexican camera that asks citizens to report smuggling or illegal border crossings to local authorities.

The rapid spread of digital technologies, often referred to in the scientific and academic environment as the “digital revolution”, is fundamentally changing the scope of banking services. This transformation has existed in one form or another for decades since the late 1950s [11].

The complex combination of technological and competitive changes can only be adequately managed if the specifics of the new financial activity are properly taken into account. Many of the innovations associated with digitalization and fintech cannot be viewed through the prism of the traditional approach to regulation, when the same requirements are imposed on all entities in the same sector. This is because many of the new activities, products and services, such as those in the rapidly growing payment market, have completely different business models, interact with customers differently and use different infrastructure.

Regulators and supervisors should only monitor these technology issues and develop appropriate legislation if their approach takes these new platforms and services into account. Banks can interact with new fintech companies in a variety of ways, both by competing with them and by collaborating. So, banks, on the one hand, can promote their own methods and introduce innovations based on a client-oriented approach, and on the other hand, improve the efficiency of their own business model, look for new profitable areas based on cooperation with fintechs and adapt to customer requests [12].

The transition to a digital economy, which is not equipped with proper legislative support, also has a significant impact on the transformation of banking regulation. Using more advanced information technologies, banks are able to reduce costs and increase revenues. Modern technologies become attractive to the client, who often receives better conditions from their use than in cooperation with banking institutions. Undoubtedly, the strategic development of banking technologies can have a positive impact on the development of banking products and services [13-14].

It must be admitted that in the context of digitalization or the widespread use of digital technologies, the entry of any company into the market of banking products and services complicates the regulation of banking operations, and their banking reliability can really get out of control. According to a number of estimates, in such a situation, banking regulation may weaken.

Taking this into account, the process of state management of the banking business in the conditions of the social-digital economy should consist of certain steps (Table 2).

The issue of potential problems that may be faced by the regulators of the banking sector has been studied by a number of European experts. Thus, according to economists, regulators that set the task of developing new approaches to regulating the banking sector in the context of the development of digital technologies face the following problems [15]:

1) From the point of view of ensuring financial stability, operational risks in the field of IT and cybersecurity risks are one of the key vulnerabilities for regulators. Cyber threats can cause enormous economic damage, especially when the technology itself is not secure enough. For example, automated tools and services, such as electronic trading platforms and robotic advisors, can increase the risk of banking sector volatility and procyclicality in stressful market conditions.

Table 2: The main steps of the process of state management of the banking business in the conditions of the social-digital economy

	Steps
1	formation of a system of information and analytical support, which is mandatory for prompt and correct assessment of the level of financial security of the state, forecasting potential external and internal threats for the unconditional fulfillment of the obligations of the banking system
2	monitoring of the internal and external environment, during which internal and external risks and threats appear. At the same time, possible threats should include a decrease in the capitalization of the banking system, a decrease in its profitability, a deterioration in its liquidity, an imbalance in the currency structure of banking assets and liabilities, worsening conditions for competition, etc
3	forecasting expected threats and risks, determining measures to prevent them. Timely identification of internal and external threats is a prerequisite for organizing the process of ensuring the banking security of the state. At the same time, the key measures to prevent internal and external threats include the introduction of innovative technologies and methods for analyzing and processing information in order to assess and ensure the financial security of the state and an adequate level of control over the activities of management objects (banks)
4	comprehensive diagnostics of the financial security of the banking system, which is the basis for making managerial decisions that ensure the prevention of crisis phenomena. The specified diagnostics allows assessing the overall efficiency of the banking system, which results in obtaining conclusions regarding the current level of banking security, key threats to the banking system and developing an optimal model of its behavior. At the same time, the results of the analysis should be unambiguous and understandable, exclude double interpretation, which will avoid their inadequate perception and erroneous measures on the part of management subjects

2) From a consumer protection perspective, the application of new technologies also comes with new risks. Expanding access to the use of personal data of customers increases the relevance of the development of regulations aimed at their additional protection. In addition, some risks arise from the greater use of automated tools, even though they provide a greater

degree of control and monitoring of customer relationships. The use of digital devices (mobile applications) and cloud technologies increases the circulation of personal data. Thus, it seems appropriate for banking regulators to provide more stringent security measures (for example, data encryption methods), tighten requirements for the geographical location of data, including issues of international transfer of personal data.

3) Banking regulators also need to be aware that digital technologies allow banks to increase their efficiency: for example, reduce costs through scale, simplify entry into the market, provide greater resilience, speed of operations, flexibility in interaction with customers, etc. For example, cloud solutions offer banks many opportunities related to flexibility and scalability in terms of data storage and analysis.

4) Finally, regulators should ensure the integrity of the banking system by keeping the behavior of market participants within the existing regulatory requirements. For example, the high speed of real-time payments, high availability of funds, and anonymity can attract attackers to carry out illegal financial transactions. Thus, when digital channels are used to receive and serve customers, new challenges arise for regulators in the area of combating money laundering and terrorist financing. All the problems associated with the development of digital technologies in the banking sector are not fully covered by the traditional approach to regulation, which is mainly focused on establishing capital or liquidity requirements. In this regard, it seems important for regulators to develop optimal, balancing regulatory methods that would not hinder the transformation of the banking sector.

Effective and safe development and functioning of the digital financial space requires coordinated activities at the level of all its participants, as well as timely improvement of regulation, which will, on the one hand, maintain the stability of the financial system and protect consumer rights, and on the other hand, promote the development and implementation of innovative financial products and services. In this context, it is worth noting that in foreign practice, unlike in fintech companies become new participants in the financial sector - start-ups in the field of providing financial products and services that compete with traditional banking institutions. At the same time, the fintech industry, represented by technology companies, is concentrated directly in the banking system, where the banks themselves are active providers of financial technologies.

4. Conclusions

Thus, in the conditions of an unstable macroeconomic situation, digitalization allows banking business models to actively develop in the banking sector and restructure their approaches in the post-crisis period. In turn, the transformation of banking business models is important not only for the industry itself, but also for supervisory authorities. While the focus of attention of banking regulators in the past was often occupied with risk analysis in terms of capital management and liquidity, it is actively developing in the practice of banking. questions.

State regulation of banking activity is the application by the state of a system of measures and instruments of influence on the banking sector to achieve important public goals. At the present stage of development of the banking system, the issue of using new approaches to improve state regulation of banking is extremely relevant. In the context of deepening international banking competition and a significant impact on domestic banks of the consequences of the global financial crisis, state regulation of banking requires new approaches to the development and application of measures and tools by government agencies to influence banking activities in order to ensure the stability of the banking system and economic growth.

The regulation of the banking system is under significant pressure from the corporate interests of commercial banks, their owners, therefore, constant state intervention is necessary for the normal functioning of the banking sector of the country's economy. The systems of supervision and banking regulation in the context of the global financial crisis have shown a limited ability to provide full-fledged lending to the economy. Therefore, there was an objective need to adapt the system of banking supervision to post-crisis conditions.

References

[1] González–Páramo, J. M. 2017: "Financial innovation in the digital age: Challenges for regulation and supervision". Revista de Estabilidad Financiera, no. 32, pp. 9-37.

[2] Rogerson, R. 2016: "FinTech Impact on Retail Banking – From a Universal Banking Model to Banking Verticalization". At: Chishti, S. and Barberis, J. (eds.). The FinTech Book: The Financial Technology Handbook for Investors, Entrepreneurs and Visionaries. London 56, pp. 248-252.

[3] Hanna, N. A role for the state in the digital age. *J Innov Entrep* **7,** 5 2018. https://doi.org/10.1186/s13731-018-0086-3

[4]Liu, E. X., & Cuevas, A. 2022. Stay Competitive in the Digital Age: The Future of Banks, IMF Working Papers, 2021(046), A001. Retrieved Feb 12, 2022, from https://www.elibrary.imf.org/view/journals/001/2021/046/article-A001-en.xml

[5] Bogers, M.L., Chesbrough, H., & Moedas, C. 2018. Open Innovation: Research, Practices, and Policies. California Management Review, 60, 16 - 5. https://doi.org/10.1177/0008125617745086

[6] Hai, T.N., Van, Q.N. and Thi Tuyet, M.N., 2021. Digital transformation: Opportunities and challenges for leaders in the emerging countries in response to covid-19 pandemic. Emerging Science Journal, 5, 21-36.

[7] EBS 2020. Walking a Tightrope.COVID-19 and Expected Capital Shortfalls for European Banks.URL: https://zeb-consulting.com/enDE/Publications/European-Banking-Study-2020-2nd-edition

[8] Frost J 2020 "The Economic Forces Driving Fintech Adoption Across Countries" In M King and R Nesbitt (eds), The Technological Revolution in Financial Services, Toronto: University of Toronto Press

[9] Goldfarb, A and C Tucker 2019 "Digital Economics" Journal of Economic Literature, 57(1), 3-43

[10] Kryshtanovych, M., Oliinyk, N., Skliaruk, T., Voityk, O., & Doronina, I. 2021. Problems of shaping the business environment in countries with economies in transition: aspects of anti-corruption. Management Theory and Studies for Rural Business and Infrastructure Development, 43(2), 316–327. Retrieved from https://ejournals.vdu.lt/index.php/mtsrbid/article/view/2332

[11] Rovelli, P., Ferasso, M., De Massis, A., Kraus, S. 2021. Thirty years of research in family business journals: Status quo and future directions. Journal of Family Business Strategy. Advance online publication. https://doi.org/10.1016/j.jfbs.2021.100422

[12] Hansen, A. M., Kraemmergaard, P., & Mathiassen, L. 2011. Rapid adaptation in digital transformation: A participatory process for engaging IS and business leaders. *MIS Quarterly Executive*, *10*(4).

[13] Kryshtanovych M., Dragan I., Chubinska N., Arkhireiska N., Storozhev R. 2022. Personnel Security System in the Context of Public Administration. IJCSNS International Journal of Computer Science and Network Security, Vol. 22 No. 1 pp. 248-254 https://doi.org/10.22937/IJCSNS.2022.22.1.34

[14] Sylkin, O., Kryshtanovych, M., Bekh, Y., & Riabeka, O. 2020. Methodology of forming model for assessing the level financial security . Management Theory and Studies for Rural Business and Infrastructure Development, 42(3), 391–398. https://doi.org/10.15544/mts.2020.39

[15] Tsindeliani, I.A., Proshunin, M.M., Sadovskaya, T.D., Popkova, Z.G., Davydova, M.A. and Babayan, O.A. 2022, "Digital transformation of the banking system in the context of sustainable development", Journal of Money Laundering Control, Vol. 25 No. 1, pp. 165-180. https://doi.org/10.1108/JMLC-02-2021-0011