FINANCIAL, ACCOUNTING, AND ANALYTICAL ENSURING OF THE FORMATION OF THE ANTI-CRISIS POTENTIAL OF FINANCIAL REGULATION AND CONTROL SYSTEMS IN UKRAINE UNDER THE CONDITIONS OF DIGITALIZATION

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Abstract: The article examines modern approaches to the formation of the anti-crisis potential of financial regulation and control systems in the conditions of digitalization. The importance of the implementation of digital technologies in the financial sphere, as well as the role of financial analysts in providing accounting and analytical support, is determined. The issue of the formation of reserve funds and the use of financial instruments to ensure the stability of the financial system in crisis conditions is considered. Approaches to improving the tools of financial systems functioning in conditions of digitalization are defined. A SWOT analysis of the effectiveness of the application of innovative tools of financial and accounting and analytical support was carried out.

Keywords: financial regulation; financial control; tools of financial regulation; fintech innovations.

1 Introduction

In the conditions of constant dynamic changes in the economic environment, which have been observed in recent years, the stable functioning of financial systems becomes critically important for ensuring the sustainable development of the country. The relevance of this problem is additionally due to profound changes taking place in the field of financial regulation and control. At the same time, one of the most important and urgent tasks is the formation of the anti-crisis potential of financial regulation and control systems in the conditions of intensive implementation of digital and information technologies in business processes at all levels.

An important aspect of solving this problem is the provision of financial and accounting, as well as analytical support for business processes. At the same time, financial support contributes to the formation of stability and efficiency of financial systems and increases their transparency and reliability. In turn, accounting and analytical support is focused on the formation of high-quality and timely information about the state of financial systems and the efficiency of their functioning. At the same time, the basis of the formation of systems of financial, accounting, and analytical support for anti-crisis potential is the analysis of modern approaches to this economic toolkit, which allows formulating the conceptual foundations of the anti-crisis potential of financial regulation and control systems in conditions of digitalization. Also, on the basis of this toolkit, there is an opportunity to form practical recommendations regarding the general improvement of the financial systems functioning, since the analysis allows

clarifying the main problems that arise in the process of forming the anti-crisis potential of financial regulation systems.

The introduction of digital technologies in the financial sphere, their positive impact on increasing the efficiency and transparency of financial operations, as well as the role of financial analysts in the formation of accounting and analytical support for business processes is also of great importance in modern conditions. Digitization also contributes to the development of new analytical tools for financial regulation, which are implemented on the basis of the use of the latest information technologies and significantly increase the possibilities of processing information about crisis trends in financial and economic systems.

In general, the indicated trends determine the objective need to reveal the problems of forming the anti-crisis potential of financial regulation and control systems, which determines the urgency of researching the principles of ensuring the effectiveness of financial systems in general and finding ways to improve the tools of financial regulation in particular. At the same time, the solution of the set tasks can be useful for financial institutions and state administration bodies that are engaged in regulatory management of the functioning of financial systems in Ukraine.

2 Literature Review

The study of the problems of financial, accounting, and analytical support for the formation of the anti-crisis potential of financial regulation and control systems in the conditions of digitalization of the system of economic relations is currently a rather important and relevant direction of research in the field of finance and economics. At the same time, it is important to note that the practice of studying the tools of financial and accounting, as well as analytical support has a fairly significant amount of development in traditional economic science. Instead, modern research related to the application of digital and information technologies in the implementation of processes of control over the functioning of financial systems and in the formation of anti-crisis measures aimed at ensuring their effectiveness demonstrate the need to transform classical approaches to financial regulation of business processes.

In particular, it is worth noting the study of the role of financial regulation and control in managing the anti-crisis potential of economic systems, which is presented in the work of N. B. Kushnir, which highlights the role of financial regulation in ensuring the stable functioning of the economic system in the conditions of crisis phenomena on the basis of the formation of the principles of financial stability of the system and preventive forecasting of crisis situations [17]. The development of this approach, taking into account the modern specifics of the digitalization of economic relations and its impact on financial regulation and control, was found in the study of O. M. Shevchenko, who examines the impact of digital technologies on the processes of financial regulation and control. At the same time, the author proves that digital technologies significantly change approaches to the implementation of the financial regulation process, contributing to more effective monitoring of financial transactions, automation of reporting processes and analytics in business processes [20].

The anti-crisis potential and its formation as a component of the financial regulatory system is considered in the study of S.O. Arefiev, who defined the modern understanding of the essence of the anti-crisis potential and identified its main components. In particular, the author notes that the formation of anti-crisis potential involves the implementation of effective financial mechanisms and systems of financial regulation. On the basis of this, opportunities are formed to determine the strategy of

actions for the implementation of anti-crisis measures of business entities in the context of ensuring effective regulation of business processes [2].

It is also necessary to note the study of the principles of application of digital technologies in financial regulation and control, which are outlined in the study of P.R. Pucenteillo. In particular, the author points out the possibilities of using digital technologies in financial control in order to improve its efficiency and accuracy. At the same time, the importance of implementing intelligent analytical systems, artificial intelligence, and blockchain technologies to ensure a high level of control in the financial sphere is particularly emphasized [19].

In general, it can be noted that the study of the problems of the effective application of analytical tools in the regulation of financial systems and business processes is sufficiently widely covered in modern scientific research. Thus, in the context of the study of modern challenges and prospects of the digital transformation of financial regulation and control, it is worth noting the research of such scientists and practitioners (including in the industry plane - in particular, agriculture) as O. Agres [1], I. Arutiunian [3], I. Britchenko [4], V. Chudovets [5], M. Dziamulych [6-13], O. Ermakov [14], O. Ivanenko [15], T. Kulinich [16], O. Laburtseva [18], T. Shmatkovska [21-25], R. Sodoma [26-28], A. Tiurina [30], I. Tsymbaliuk [32], V. Yakubiv [33], O. Yatsukh [34], and many others.

Summarizing, it can be stated that the study of financial and accounting analytical tools for the formation of the anti-crisis potential of financial regulation and control systems defines this problem as sufficiently relevant and difficult to solve. The main focus of research in this area is made on determining the role of financial regulation and clarifying the impact of digitalization on the financial sphere. At the same time, the issues of the formation of the anti-crisis potential and practical application of digital technologies in financial regulation require a more detailed study in order to develop recommendations for improving the system of financial regulation and control in Ukraine.

3 Materials and Methods

The study used a complex of specialized methods to study and analyze the financial and accounting, as well as analytical support of financial regulation systems. The use of these research methods made it possible to obtain a comprehensive approach to the study of financial, accounting, analytical support. In particular, the analysis of literary sources related to the financial and accounting and analytical support of the anticrisis potential of financial regulation and control systems made it possible to obtain a theoretical basis for further research on the topic.

Based on the use of various methods of analysis, such as comparative analysis, factor analysis, correlation analysis, and others, a comprehensive analysis of financial and accounting, as well as analytical support of the anti-crisis potential of financial regulation and control systems was conducted. This made it possible to identify relationships and dependencies between various factors and indicators affecting the effectiveness of anti-crisis management.

Economic and mathematical modelling was used to study the impact of various factors and scenarios on the anti-crisis potential of financial regulatory systems. This made it possible to predict the possible results of the implementation of various strategies and policies of crisis management.

As a result of the application of these research methods, an assessment of the current state of financial, accounting, analytical support of the anti-crisis potential was made, its advantages and disadvantages were identified, and recommendations were offered for improving the system of financial regulation and control in Ukraine, taking into account digitalization processes.

4 Results and Discussion

The transformations taking place in the modern economic environment involve the large-scale introduction of information technologies and digital tools into the financial sphere, which significantly changes the conditions for the functioning of financial systems. In addition, digitalization leads to the emergence of new opportunities, but at the same time creates new challenges and threats, which may manifest themselves in the form of increased risk of cyber attacks, financial fraud, and other crimes in the digital environment. In this regard, the understanding and effective use of digital tools in financial regulation and control systems becomes extremely important to ensure the stability and security of financial markets. That is why the development of new approaches to the formation of financial, accounting, analytical support, focused on ensuring the effective anti-crisis potential of financial regulation systems, will significantly contribute to the creation of new strategies and tools for preventing manifestations of financial crises, identifying risks and increasing the effectiveness of supervision over the functioning of financial institutions. The implementation of such strategies, in turn, will ensure the stability of the financial system, protect the interests of depositors and other market participants, as well as contribute to maintaining trust in financial institutions and the financial activities of other business entities.

Special attention should now be paid to the opportunities provided by the latest digital and information technologies to increase the effectiveness of analytical tools in the field of financial regulation. In particular, the development of automated systems for the analysis and monitoring of financial transactions can significantly improve the detection of illegal actions of participants and market manipulation, which can provide more effective control over financial transactions. In addition, digital financial and accounting tools can be used to develop simulation models and forecast the development of crisis situations in the country's financial system. This opens up wide opportunities for state regulatory bodies to make informed decisions in advance and develop strategies aimed at preventing and managing financial crises. In addition, the study of the impact of digitalization on financial reporting and auditing is gaining special relevance in this aspect. Given the rapid changes in the information field, it is already necessary to develop new accounting standards and methodologies in order to reliably assess the financial condition of companies that use digital technologies and tools.

The key guidelines for changes in the field of modernization of financial and accounting tools in the digital economy are as follows:

- Expanding the display of the enterprise's sphere of activity in accounting and financial reporting;
- Improving the quality and efficiency of financial regulation and control;
- Identifying and increasing the number of business processes subject to analysis and control;
- Development of innovative methods of assessing business processes;
- Formation of approaches to the integration of various types of financial, accounting, analytical tools into the system of financial regulation;
- The use of more advanced information technologies in accounting and analytical processes;
- Development of theoretical, methodical, and applied aspects of the development of financial and accounting, as well as analytical instruments of financial regulation and control.

In this aspect, special attention should be paid to studying the possibilities of evaluating business processes that are subject to analysis and control. At the same time, the regular inclusion of non-economic data in the analytical system, which comes in the form of qualitative characteristics of business processes, is observed [35-38]. In a practical aspect, the integration of new analysis and control tools is implemented on the basis of innovative developments in IT technologies, which include cloud technologies, open technological platforms, electronic reference information and analytical systems, the creation of a single international format and content of financial reporting in electronic XBRL form. Thus, these trends shape opportunities for creating such a system of financial regulation and control, which integrates data that determine both the state of the company's internal business processes and the external environment [31].

In a practical aspect, the latest financial, accounting, and analytical tools are most clearly manifested in the innovative financial technologies, which are a consequence of the transformation of traditional financial services in the process of digitalization. Their list is most appropriately determined based on the recommendations of the Basel Committee on Banking Supervision (Table 1).

| Table 1. Classification of fintech products and services |
|--|
| according to the Basel Committee on Banking Supervision |

| Areas of financial | Financial technologies | |
|----------------------|--------------------------------------|--|
| activity | | |
| Loans, deposits, and | 1. Crowdfunding | |
| capital raising | 2. Credit market | |
| | 3. Mobile banking | |
| | 4. Scoring models for assessing | |
| | creditworthiness | |
| Settlement and cash | 1. Mobile wallet | |
| operations, clearing | 2. P2P payments | |
| | 3. Cryptocurrencies | |
| | 4. Amount of settlement calculations | |
| Management of | 1. High-frequency trading | |
| investment processes | 2. Copy trading | |
| | 3. E-trading | |
| | 4. Automated counselling | |

Source: [29]

As one can see, a sufficient selection of innovative technologies is possible in the process of anti-crisis management. At the same time, the entire set of the latest technological tools, which can be used in the process of financial regulation and control, can also be divided into three functional groups of innovations, namely:

- Process innovations that affect and change all links functioning in business processes. They represent innovations and changes as a result of interaction with macro-environmental factors, planning of material and technical support of business processes, management of cash and material resource flows, personnel, organizational, and structural transformations, and creation of innovative processes in product manufacturing.
- 2. Product innovations, which are the material embodiment and result of innovative transformations and the development of new types of activities. They provide for the creation (within the framework of business processes) of a system of appropriate technological processes necessary for the production of new competitive products that require the design to achieve a certain quality and efficiency of business processes.
- 3. Allocative innovations (reorganizational), which consist in the nature of redistribution of resources of business entities. Such innovations represent the restructuring or reorganization of enterprises for the purpose of redistribution of resources and constant interaction of all its structural divisions, as well as the interaction between employees of the business entity within the framework of functioning business processes.

Currently, the most promising technology that can be used in the processes of financial regulation and control at both the micro and macro level is the blockchain, that represents a technology involving the formation of a distributed decentralized network of data storage (transactions), the elements of which are records blocks of a certain size, each of which contains a link to the previous one and is combined into a chain of blocks according to an identifier that is calculated by a special mathematical algorithm.

In addition, powerful cryptographic algorithms ensure its protection. Such a property as distribution consists in the possibility of saving copies of data on a significant number of computers that are located around the world, which, in turn, creates the risks of unauthorized access and data modification [19]. This is the main reason for using this technology as an element of innovative systems of financial regulation and control.

In general, the majority of modern researchers consider blockchain technology to be very promising in relation to future anti-crisis regulation with the help of specialized innovative financial and accounting, as well as analytical tools. That is why the field of financial regulation and control is one of the most successful areas of implementation of blockchain technology in the context of forming the anti-crisis potential of financial systems. At the same time, a number of specific features of the use of this tool can be identified (Table 2).

Table 2. Specific features of blockchain application in the system of financial regulation and control

| | of financial regulation and control |
|--------------------|--|
| Operation | Content |
| Triple entry, | Permanent access to the financial |
| namely: | statements of each registered enterprise for |
| registration of | regulatory authorities. This will allow |
| data from each | demonstration of the financial transparency |
| enterprise | of enterprises, constant control to avoid |
| transaction with a | errors, reduction of financial risks, and |
| third entry in the | reduction of costs for obtaining and |
| state or | checking documentation. |
| international | |
| register | |
| Digital audit | Creating the necessary conditions for |
| - | auditing at each stage of business processes |
| "Smart" contracts | The use of electronic signature will reduce |
| | time and labour costs for fulfilling the |
| | terms of contracts. Decentralization of the |
| | contract, reliability of data sources, power |
| | of attorney of the parties, automation of |
| | payments, etc. are also involved. |
| Cloud data storage | Secure storage of all financial data. Saving |
| | money on the work of central servers |
| Simplification of | The movement of assets is carried out in |
| displaying the | the form of a transaction, which, in turn, |
| movement of | provides access to financial and |
| assets within the | management information in real-time |
| system | |
| Use of | The used system of blocks in the |
| transactions for | blockchain will allow the formation and |
| settlements with | write-off of receivables and payables at the |
| counterparties | same time as a basis for permanent |
| • | confirmation of the fact of the transaction |
| Simplification of | Thanks to the secure registration of |
| the resource | transactions, the entire process of resource |
| management | management in business processes is |
| process | simplified |
| Avoidance of | Avoidance of such negative factors is |
| abuses, | implemented on the basis of full |
| unconfirmed | transparency of information online |
| expenses | |
| Source: [19] | |

At the same time, the use of blockchain and specialized financial and accounting analytical tools to ensure the effective functioning of the financial regulation and control system requires the implementation of coordinated measures in the financial system itself. The following should be included among such measures:

- Adherence to a balanced approach in the field of state regulation of the financial technology market. On the one hand, the task of the state is to create a favourable environment for the development of innovations, on the other - to control and minimize the risks associated with the functioning of financial markets.
- 2. Introduction of open banking through the approval of the norms of the European directive PSD2 in Ukraine. Open banking involves "uniting" different banks and platforms into a single system and providing access to user data from different "points". The main advantage of such an initiative is that open banking represents an incentive for competition. In addition, open banking is a component of the system of financial regulation of business processes financed by bank lending.
- 3. Involvement specialized financial companies in outsourcing, that will help implement projects which require speed and flexibility based on the application of specialized financial, accounting, and analytical support. In turn, this approach will stimulate the growth of investment in the real sector by the banking system.
- 4. Increasing the level of financial literacy of the population, which is based on the simplicity and accessibility of information presentation, ergonomic and design solutions, the implementation of artificial intelligence elements, and the development of robotic consulting and machine learning in the financial sphere.
- Formation of personnel potential, which involves ensuring future 'access' to specialists who possess key competencies for the fintech industry, creation of an attractive education system, as well as the implementation of a favourable immigration policy [20].

It is advisable to conduct a practical evaluation of the effectiveness of the application of innovative instruments of financial regulation and control based on the use of digital technologies on the basis of SWOT analysis (Table 3).

| Table 3. SWOT-analysis of the application of innovative tools |
|---|
| for firm an aight a could tion and control in business and conserve |

| for financial regulation and control in business processes | | |
|---|-----------------------------|--|
| Strengths | Weaknesses | |
| $\partial \partial $ | 1. The need to retrain the | |
| preparation of financial | staff of analysts, which | |
| statements. | involves loss of time and | |
| 2. Continuity of data recording | money in the short term. | |
| with a high level of security. | 2. High cost of | |
| 3. The possibility of restricting | | |
| access to data by a certain number | | |
| of persons. | 3. The need to review and | |
| 4. Ensuring transactions are | | |
| carried out in conditions of high | | |
| accuracy with minimal time costs. | | |
| 5 Saving time by simplifying the | | |
| financial audit system. | | |
| 6. Reducing the number of errors | | |
| in accounting due to minimizing | | |
| the influence of the human factor. | | |
| 7. Transmission, analysis, and | | |
| verification of data in real-time. | | |
| Opportunities | Threats | |
| 1. Possibilities of work processes | | |
| automation. | malfunctions. | |
| 2. Possibility of complete | | |
| | standardization, investment | |
| | risks may arise. | |
| 3. Possibility of expanding | | |
| business processes due to the | attacks. | |
| reduction of time and money costs | | |
| in the long term. | | |
| 4. Possibility of more efficient | | |
| allocation of resources in business | | |
| processes due to the reduction of | | |

| risks when registering various | |
|----------------------------------|--|
| transactions. | |
| 5. Implementation of smart | |
| contracts. | |
| 6. The possibility of using and | |
| accounting for digital assets as | |
| innovative objects. | |
| Source: [19] | |

Based on this, it can be argued that, from a practical point of view, adaptive monitoring of strategies based on digital tools of financial, accounting, and analytical support, due to the breadth of coverage, allows for a more reliable assessment of the strategy of anti-crisis potential, since the reliance on new technologies is a decision made on a new, innovative basis, which allows increasing the efficiency of business processes and contributing to the strengthening of market positions for the business entity and the financial system in general. Such a strategy can be more or less obvious, and be formulated in more or less detail; but stable ideas for increasing the efficiency of financial regulation and control should be deployed in the direction of improving scientific and technical progress, and also avoiding crisis phenomena when making changes, without looking for other reductions, except for operational time in the selected space.

5 Conclusion

Thus, we come to the conclusion that an important component of the digitalization of financial regulation and control systems is the automation of the collection, exchange, analysis, and use of information in electronic and digital form and the creation of a general information system within business processes. At the same time, specific processes of implementation of digital information systems and their integration into the general digital information system of the industry or the national economy as whole will contribute to the growth of the value of business entities for consumers. The sphere of financial regulation and control when applying digital innovations requires a special approach and developments on this issue. It is necessary to stimulate business entities to actively implement digital technologies in business processes, as well as to solve problems that arise at the stage of their implementation. Accordingly, the competitive advantage of enterprises that possess information and communication technologies of financial regulation and control is obvious, and today it is necessary to advance more actively on this path. Therefore, the construction of digital systems of financial regulation should focus on the use of the latest financial, accounting, and analytical tools, due to which the introduction of information technologies into business processes will take place. In general, using the achievements of the digital economy will make it possible to eliminate the current problematic aspects of financial regulation and control.

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