

Modernization of the Ukrainian state financial control system in condition of the "Covid" economy

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Abstract. The article investigates the nowadays system of state financial control and analyzes the main principles of its functioning. The risks and threats to the national economy during the coronavirus pandemic was defined. The introduction of new information management systems into the work of state financial authorities to control the targeted and efficient use of budget funds has been substantiated. The definitions of "Covid" economy and financial electronic control were specified. The issue of modernization of state control activity under the conditions of the coronavirus pandemic was considered. The article argues on importance to develop a package of legislative acts to reform the state financial control system. The necessity to create the Supreme institution of state financial control on the basis of the Accounting Chamber of Ukraine was explained. In competence of this bodies will include the organization and implementation of financial electronic control. Authors formulate the requirements for information analytical system of financial electronic control.

Keywords: «Covid» economy, pandemia of coronavirus, state financial control system, financial e-control.

Introduction

For the second year in a row, the Covid-19 coronavirus is spreading around the world. In addition to the impact on human physical and mental health, a coronavirus outbreak will have serious negative economic consequences. Some business fields (travel agencies, restaurants and cafes, entertainment and sports facilities, air transportation, etc.) are currently experiencing hard times due to a significant decrease in demand for their services from the population. Scientists and experts agree that the coronavirus pandemic will cause a "shock" in the global economy, forcing small and medium-sized enterprises to suspend their work or close down altogether, resulting in unstable operations or the disruption of numerous economic relations.

It should be noted that our country is not an exception in this situation, and the national economy is also significantly affected by the pandemic coronavirus. Thus, due to the increase in new cases of Covid-19 diseases, a strict quarantine (full lockdown) was introduced in Ukraine from January 8 to 24, 2021, during which many restrictions were apply, which in turn greatly worsened the already difficult economic situation in the country.

As experts predicted, during a strict quarantine time, tax revenues to the budget from entrepreneurs (especially small and medium-sized businesses) decreased significantly, although it was very difficult for large businesses to maintain their positions in the market. They had to wind down their activities for at least a month, and compensation mechanisms could not become a "lifeline" for most small and medium-sized enterprises. But by introducing strict quarantines, the authorities hoped to reduce the burden on the medical sector, which means to create favorable conditions for improving the epidemiological situation.

On the other hand, the coincidence of the hard lockdown period with the New Year holidays did not significantly affect the economic indicators, if we are talking about employees. But with small business and the entertainment industry, the situation is somewhat different, because it is during the New Year holidays that they have the highest earnings. Therefore, from this point of view, negative economic consequences cannot be avoided, although there was no catastrophic situation in this area [1].

But how serious was the "covid" influence on the national economy? What will be the response in monetary and fiscal policy? These questions are now at the center of attention of experts, scientists and society and are the subject of heated debates and disputes, so this topic is very important. Moreover, in connection with the next surge in the incidence of coronavirus and increasing the number of hospitalized people, the third wave of COVID-19 is already clearly outlined in Ukraine with the possible entering a new full lockdown in April - May 2021.

It can be stated, that the management of organizations has always faced questions that had to be solved: rent of premises, payment for employees' work, effective organization of business-processes and many others, which influence the economic performance of an enterprise and have certain business risks.

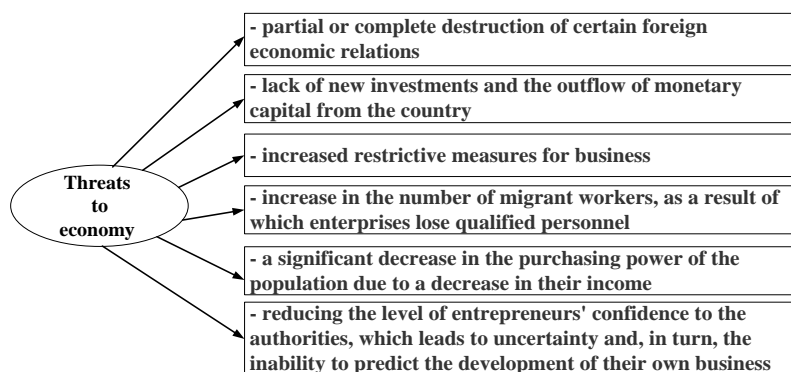


Fig. 1. Threats to the national economy of Ukraine.

Analyzing modern "covid" realities, it should be noted that now it is not the failure or breakdown of equipment, not problems with counterparties, not even the traditional financial difficulties, but quite another risk that comes to the fore and becomes the key one - the this is the decision of the authorities to introduce a lockdown, by suspending while working in many sphere of business.

In the context of the entering of quarantine, the authors identify several significant threats to the national economy (see Fig. 1).

But it should be noted that the consequences of Covid 19 may open up new opportunities for the national economy (see Fig. 2).



Fig. 2. Influence of Covid 19 on the Ukrainian economy: the emergence of new opportunities.

There is also the possibility that after quarantine, large companies, as well as owners of small and medium-sized businesses, will begin to develop strategies for transitioning to a distributed business model. It is characterized by the fact that employees will work at home in so-called "home offices" for a maximum amount of time, and communication will be carried out not even through e-mail or chat, but by virtual "substitutes" for meetings, presentations, etc. It is clear that an employee's home workplace in such a case will need to be substantially re-equipped with both hardware and software. Not without reason now recorded a significant increase in demand for modems, routers and other computer equipment.

Due to the coronavirus pandemic, universities in Ukraine (as well as in most European countries) are forced to return to distance learning. However, note that online education has objective advantages as well. According with this model, teachers are more likely to be mentors, colleagues for students. They not only share information when standing directly in the classroom, but also guide, motivate their students, giving them more independence and the opportunity to apply various learning methods. At the same time, they connect when needed help or additional advice. [2]

It is important to note that there are business areas that have clearly benefited from the coronavirus crisis, such as online commerce, that will flourish even more with the development of digitalization in the country. Hence the increased demand for investment in the development of the Internet, IT services and digital literacy training.

Therefore, now in Ukraine, various economic and management systems (based on modern information technologies) are being successfully designed and implemented, allowing to quickly move to a new level of development of society, bypassing intermediate stages [3]. The foundations for such a transition or the so-called "digital leap" were laid in the Concept for the Development of the Digital Economy and Society of Ukraine for 2018–2020 [4]. Its implementation will make it possible to fully introduce electronic government (e-government) as a basic element of the system of effective interaction between government, business and civil society [5]. In this Concept assumes the use of various incentives to ensure the development of the digital economy. These incentives are aimed at encouraging businesses and citizens to use information and communication technologies (ICT), thereby making them more affordable.

For citizens, the "digital economy" will mean a transition to a new level of digital services, the possibility of receiving public services in electronic form, which will minimize corruption risks [6] and will contribute to the early integration of Ukraine into the single digital space of the European Union (EU).

In the context of the spread of the coronavirus pandemic and the rapid development of information systems, research into the implementation of IT-technologies in the work of public financial bodies to control the targeted and effective use of budget funds is becoming relevant.

The system of state financial control (SFC) is an integral part of public administration. Not a single country in the world renounces control levers and targeted influence on market relations, which are a necessary condition for maintaining social stability [7]. Efficiency in the use of public funds is a key factor in the transition of the Ukrainian economy to an innovative way of development and minimizing the consequences of the impact of the pandemic, as well as strengthening the competitiveness and economic security of the state in the long term. This is defined by many regulatory documents as one of the priority directions of the state's development.

Practice shows that the design, functioning and development of an effective SFC system is one of the important factors in the qualitative modernization of the system of managing the Ukrainian economy and its development in the context of the coronavirus pandemic. The successful implementation of this system is very important. Therefore, all the aforementioned aspects indicate the need to apply the best European practices, to use an integrated approach when building an effective SFC system.

Improving the efficiency of the use of taxpayers' funds, as well as control over budget expenditures is one of the priority directions of development of our state. However, it should be noted that today a significant part of state resources and budgetary funds are outside the zone of effective financial control, which leads to the misuse of these resources and creates preconditions for corruption crimes. This, in turn, is a significant obstacle to the entry of our state into the EU and hinders the achievement of the strategic goals facing Ukraine.

In recent years, corruption has become systemic. According to official data of the Accounts Chamber of Ukraine for 2019, auditors during the course of external financial control revealed violations in the amount of UAH 49.8 billion, which is the highest indicator for 2011-19 [8].

At the same time, the specified volume of violations and shortcomings in 2019 increased by 2.9 times compared to the volume of violations and shortcomings identified by the Accounts Chamber in 2018.

Based on the foregoing, we can conclude that now it is necessary to urgently solve an important scientific and applied problem for the further modernization of the structured system of the SFC. This is necessary to substantiate the development strategy, improve the forms and methods of implementing control and analytical actions aimed at preventing and warning financial offenses in the economy during a pandemic.

The issues explored in this article are devoted to the works of many prominent scientists-economists, namely: Bailey J., Jackson P., Evert V., Tomkins S. and others. The digital space and the place of a person in it were investigated Eric Brignolfson, Nick Bostrom and others.

The influence of Covid-19 on certain spheres of the economy was considered in the works of John W. Goodell, R. Baldwin, B. Weder di Mauro, V. Gimpelson.

So John W. Goodell notes that today it is quite difficult to predict the full impact of the coronavirus pandemic on the economy in general and on the financial sector in particular, because with the increase in the scale of the epidemic, the likelihood of a collapse of the banking industry also increases [9].

It is also important to note, that the need to build an effective SFC system in Ukraine has been discussed for quite some time. There is a large number of scientific works, publications and discussions (in the media, at scientific conferences) covering certain aspects of this topic. In particular, the issues of creating and developing the SFC system, increasing the efficiency of the functioning of its individual components (including functioning during a pandemic) were displayed in the works of Ukrainian scientists: V. Geyets, S. Komisarenko, V. Symonenko, B. Danilishin and others.

However, despite the efforts of the scientific community and the public, the question of building a coherent, effective anti-corruption system of the SFC, its functioning during a pandemic, as well as concretization and further analysis of the concepts of financial e-control and "covid" economy are quite relevant.

Scientists and analysts are currently investigating the impact of the pandemic on finance, governance, migration, public health and security issues. Most international organizations, national universities and government agencies in many countries have created appropriate portals where analytical and information materials on this topic are published.

Due to the multidimensional impact of the pandemic on the global and national economy, there is no unified definition of the concept of "covid" economy, but rather influence of Covid on different aspects of economy. Therefore, the authors propose the following interpretation:

A "covid" economy is an economy that has adapted and functions in the condition of the coronavirus pandemic, and will also continue to function in the post-epidemiological period.

In this article, the authors made one of the first attempts to analyze new phenomena associated with the functioning of the domestic economy in a pandemic and the resulting digital transformation of the financial system of the state.

The purpose of the research is to formulate the requirements for a technical solution that allows to modernize the system of state financial control of Ukraine in the situation of the coronavirus pandemic.

To achieve this goal, it is necessary to consider three interrelated areas:

- study of the general problems of the existing SFC system;
- concept concretization of electronic financial control, its place and role in the structure of the SFC system;
- formulation of requirements for the financial e-control subsystem for the modernization of the SFC system.

Based on the foregoing, we believe that the topic of the article in modern realities is quite relevant and is of considerable scientific interest.

1 Studying the general problem of the existing SFC system

The Concept for the modernization of the SFC system notes that the main problem of the "incapacity" of such system to control over targeted and effective spending of public funds is the incorrect organizational and functional structure of its activities. This structure leads to a conflict of interest and doesn't correspond to the basic European independence principles of the institution of state financial control from the branches of government (legislative and executive), whose actions are checked [10].

For example, the head of the State Audit Service of Ukraine is appointed by his orders by the Prime Minister of Ukraine in agreement with the leadership of the Ministry of Finance. Given that the Prime Minister of Ukraine and the Ministry of Finance are the main managers of budgetary funds and public resources. Usually they are the initiators of the dismissal of the head of the controlling service, if he does not act in unison with the leadership of the government. Note that, with such a "system of independence" of state financial control, when the management of supervising services can be initiated and dismissed at any time, it is simply impossible to conduct a principled and effective audit of the distribution and efficient use of public resources.

The situation is no better now in all regions of the country, where today there are no state financial control bodies at all and public funds (taxpayers' funds) are spent by local officials practically at their own discretion. Therefore, it can be stated, that a situation has developed in Ukraine when an official managing budgetary resources appoints an auditor for himself. This is a total corruption scheme that needs to be changed immediately. It is necessary to create a SFC system independent of the government that meets all international norms and standards.

In the era of economy digitalization, one of the methods of combating systemic corruption can be the development and implementation of a specialized information and analytical subsystem of financial e-control (IAS SFC) in to the SFC system, which will improve the efficiency of state control over the spending of budget funds. This task has become quite urgent precisely recently, when the coronavirus epidemic is spreading rapidly around the world. But without the modernization of the existing SFC system, created on the basis of the principles and best practices of the EU, it is practically impossible to carry out this reforms.

2 Concept concretization of electronic financial control, its place and role in the structure of the SFC system

In the era of rapid development of information technology, state financial control bodies are beginning to more actively use advanced technical solutions: large data centers, centralized solutions based on Web technologies, etc.

In the field of public administration, a number of reforms are being purposefully carried out, allowing to gradually implement modern mechanisms and tools for processing information flows of data in the field of financial management.

It is important to note that the use of new formats of government in the context of digitalization (transition to the digital economy) is carried out in accordance with the Strategy for the Development of the Information Society in Ukraine [11] and the Decree of the President of Ukraine "On Sustainable Development Goals of Ukraine for the period till 2030" [12].

Therefore, in order to improve the efficiency of state control over the use of taxpayers' funds, it is advisable to develop and implement an information and analytical system - financial electronic control (IAS SFC) [13].

Note that at this moment in the scientific literature there is no specific scientific definitions both for the general concept of e-control and for its particular case - financial electronic control. Therefore, in [2] the authors proposed the following formulation of this concept:

Financial electronic control is an information and analytical system that provides automation of accounting, control of targeted and effective use of taxpayers' funds, as well as analysis and management of economic information in electronic form.

Using of IAS SFC will automate management processes (see Fig. 3):

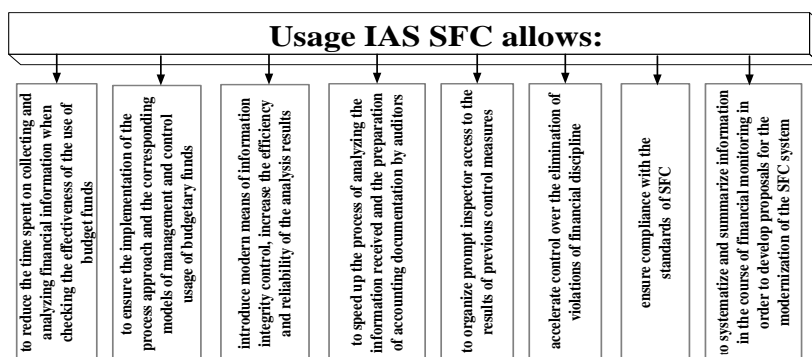


Fig. Error! Reference source not found.3. Automation of management processes using IAS SFC.

Note that the role of the financial e-control subsystem is quite important, because its introduction into the structure of SFC will ensure openness, transparency and ac-

countability of the activities of state bodies, local governments, as well as state enterprises and organizations.

The main problem that hinders the development of process control models in complex information and analytical systems is the lack of basic concepts for constructing and formal descriptions of system-wide solutions designed to integrate monitoring, analysis and process control tasks.

3 Formulation of requirements to the financial e-control subsystem for modernization of the SFC system

To implement the general tasks of modernizing the SFC system, it is necessary:

1. Develop a new draft Law of Ukraine "On State Financial Control in Ukraine over the Targeted and Effective Use of State Resources" on the basis of the developed Concept [10], where to radically change the organizational and functional structure of the creation and activities of regulatory bodies.

2. Introduce the developed and tested conceptual principles for creating an independent SFC system, to put into practice scientific and methodological materials for organizing control and analytical activities in accordance with progressive methods and forms that meet the needs of the national economy and EU requirements.

3. To create (according to projects and developments) an independent SFC system, corresponding to the nature of state control, based on unified organizational and methodological principles, which is characterized by clear hierarchy and integrity.

4. Introduce the said Concept into the system of state financial control, which will allow the regulatory authorities to adequately (fundamentally) respond to numerous socio-economic problems and new realities of the "covid" economy; ensure the stability of the relationship between all branches of government; will enable the control function to cover various spheres and levels of the Ukrainian economy.

An important part of the implementation of the Concept is the creation of a specialized information and analytical SFC system on the basis of an information platform that unites both state bodies and recipients of budget funds, in compliance with several mandatory conditions, namely:

- ensuring the accuracy of all documents related to the use of budgetary funds, including all adjustments and clear identification of administrators and recipients;
- ensuring the centralization of information processing and storage in a distributed environment;
- ensuring the security of the received and stored information from distortion or unauthorized access.

The analytical part of IAS SFC is a specific symbiosis of ERP and CRM systems [14, 15] and should contain the following components:

- frontal part, which provides access and filing of documents of participants with autonomous, distributed or centralized information processing;
- the operational part, which provides authorization of transactions and operational reporting, as part of the accounting, controlling, treasury, financial and management modules;

- data store;
- analytical subsystem;
- control model support system.

The designers of the IAS SFC should be highly qualified specialists from the Treasury, the Fiscal Service, the Accounts Chamber, the Financial Monitoring Service, the Audit Service, the National Bank of Ukraine with the participation of foreign specialists. Their tasks will include the definition of data sets, formats of information, structural elements of representations, mandatory, additional and critical data fields, development and implementation of algorithms for the parameters of evaluating the results of analysis, types of feedback with elements of the IAS SFC, etc.

Here is a list of tasks that must be performed by the IAS SFC (see Fig. 4):

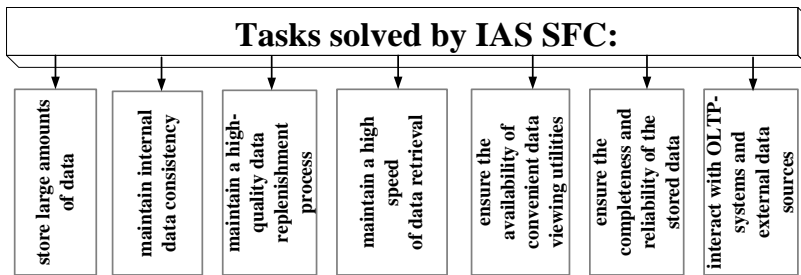


Fig. Error! Reference source not found.4. Tasks solved by IAS SFC.

The architecture of IAS SFC can use physical or virtual data storage of a centralized source for individual data applications (application of analysis results, forecasts, dynamic charts, deviation from planned targets). It is also seen as versatile and can use other tools such as OLAP tools, data mining tools, end user query and reporting tools, CRM tools, etc.

Areas of development and implementation of the financial e-control subsystem:

- transition to electronic document flow in the field of public finance management;
- automation of accounting and control activities, integration and provision of interconnections of all types of accounting of state institutions;
- ensuring the relationship of information on financial performance of budgetary organizations with benchmarks for the performance of their activities;
- ensuring transparency and publicity of information on the activities of state organizations in the field of public finance management;
- design, implementation of the system in a secure multi-layered architecture [16].

Conclusions

The research carried out focuses on modernization of the SFC system, both its organizational and functional structure, and individual segments using modern information

technologies in the context of the Covid-19 pandemic. The definitions of "covid" economy and "financial e-control" are concretized.

The following problem were identified:

- incorrect creation (at the legislative level) of the organizational and functional structure of the Institute of the SFC;
- ignoring the basic international principles of the functioning of the SFC system, approved by the Lima Declaration in 1977 regarding the independence of the SFC institute from any branch of government;
- the absence of an extensive (comprehensive) SFC system headed by its Supreme Body (the modernized Accounts Chamber), whose competence includes control over the targeted spending of taxpayers' funds, over the efficient use of state resources, etc.
- lack of a clear, understandable and harmonized normative base in the field of state financial control;
- lack of quality methodology of multifactor analysis of state budget expenditures, as well as a centralized information and telecommunication system, which allows with high accuracy to consider as reliable the processed data in the system;
- the fragmentation of information systems of various authorities and state enterprises;
- threats of cyber crime and the lack of adequate protection of personal data in the digital space;
- lack of necessary professional skills and competent specialists in the field of state financial control (including e-control)

Having analyzed the modern practical and legal aspects of the development of the SFC system for its modernization, the authors propose the following.

1. Development of a package of legislative acts and the adoption of the Laws "On state financial control over the targeted and efficient use of state resources", "On the Supreme State Financial Control Body", "On digitalization of the economy", as well as regulations on the application of the financial e-control system.
2. Creation (in accordance with the adopted law) of the Supreme Body of the State Financial Corporation on the basis of the Accounting Chamber of Ukraine, whose competence will include the organization of financial e-control.
3. Consolidation of all disparate information systems of public authorities into a single information space.
4. Application in practice of electronic signature and Blockchain technologies to increase control over individual processes, reduce the processing time for chains of operations, increase the information and security reliability of the system as a whole.
5. Creation of Personnel Training Centers for training specialists competent not only in the economic sphere, but also in the field of information technology and jurisprudence.

As a result, we note that in the post-quarantine period, which characterizes the "covid" economy, the questions of introducing a new distributed business model using modern information technologies will come to the fore.

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