

INTERNATIONAL SCIENTIFIC CONFERENCE "DEVELOPMENT THROUGH RESEARCH AND INNOVATION - 2020"

# CONFERENCE PROCEEDINGS



HR EXCELLENCE IN RESEARCH



MINISTERUL  
EDUCAȚIEI, CULTURII  
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Academia de Studii Economice a Moldovei

Online Conference for Reserachers,  
PhD and Post-Doctoral Students,

August 28<sup>th</sup>, 2020

The Academy of Economic Studies of Moldova,  
Chisinau, Moldova



ARMENIAN STATE  
UNIVERSITY OF  
ECONOMICS

Chisinau, 2021



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THE 1<sup>ST</sup>

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## THE THEORETICAL-CONCEPTUAL AND NORMATIVE-LEGAL ANALYSIS OF HUMAN RESOURCE DEVELOPMENT IN PUBLIC INSTITUTIONS

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**Abstract.** *In this scientific paper is performed a theoretical-conceptual and normative-legal analysis of human resource development. In the first part of the paper are presented several concepts regarding the development of human resources and the tangency they have with this activity. In this way, the conceptions of several authors concerned with this domain of activity were presented. In the second part of the paper, an analysis of the normative-legal aspect is accomplished, aiming the development of human resources in public institutions in the Republic of Moldova.*

*The development of human resource in the public sphere in the Republic of Moldova is regulated by a series of normative acts; they offer a model of development and promotion typical for all national public institutions. From a legislative point of view, the development of human resource in public administration is based on Section 3 of Law no. 158 of July 4, 2008 on 'Civil service and the status of civil servant', 'The regulation regarding the continuing professional development of civil servants' approved by Government Decision no.201 on March 11, 2009, supplemented by the 'Training program for civil servants for 2016-2020' approved by Government Decision no.970 on August 11, 2016.*

**Keywords:** *development, human resource, management, performance, public administration.*

**JEL CLASSIFICATION:** M12; M21.

### INTRODUCTION

The great changes in society, generated by the informational revolution and technical innovation, demographic dynamic, as well as the effects of economic globalization on the labor market, have fundamentally influenced the training and professional development systems in the last decades.

The efficiency of the public institution depends on the performance of its employees; the competitiveness of the public institution is achieved only with the help of employees of high professional and moral quality. To do this, it is necessary to invest continuously in its human resources, while pursuing the development of their professional skills and knowledge. The lack of specialists in the domain has generated the employment of people without special education, which has led to an even more pronounced decrease in human resources trained in public administration.

The actuality of the subject - the development of human resource in public administration - is dictated by the contemporary society that wants qualitative public services, technological development that requires the possession of certain skills and knowledge in the domain, the requirements of a competitive economy, international standards regarding public services and of the Association and Free Trade Agreement with the European Union, which contains relevant provisions in order to increase the quality of services provided by state institutions.

Today, the public administration in the Republic of Moldova doesn't have a modern training system in order to develop and maintain professional standards of conduct and the performance of its staff. Most public administration managers consider investing in staff development as a loss, not an investment.

In this scientific paper we aim to analyze the role and effectiveness of government strategies and programs of the Republic of Moldova in the domain of human resource development in public administration and their impact.

In order to analyze the role and effectiveness of government strategies and programs of the Republic of Moldova in the domain of human resource development in public administration and their impact, some of the most commonly used scientific research methods were applied: *documentary analysis* - studying legislation and guidelines developed with the participation of public authorities; *induction and deduction* - allowed the development of some ideas and theses.

## **THE THEORETICAL-CONCEPTUAL ANALYSIS OF HUMAN RESOURCE DEVELOPMENT**

During the evolution of the society, the development of human resource went through different phases or stages, which led to the existence of several concepts related to this domain of activity. Several researchers in the domain of human resource management and human resource development have contributed to the realization and elucidation of the term of human resource development which for many is associated with the training one. Therefore, for the beginning we set out to review the concepts related to vocational training and human resource development in order to understand better the similarities and differences between them.

Thus, from M. Armstrong's point of view, 'training is a formal and systematic change in behavior, through learning as a result of education, educational activities, development and a practical and theoretical experience [1, p.491]. On the other hand, G. A. Cole defines training as 'an activity intended to acquire knowledge and skills specific to the exercise of a trade or the performance of an operation' [2, p.31].

At the same time, the university professor Dr. Ion Petrescu defines training 'as an activity carried out in order to acquire theoretical knowledge and practical skills, of a certain kind and level, able to ensure the qualified fulfillment by employees of the tasks assigned to them in the exercise, in the process of work, of a profession or trade' [3, p.52]. Starting from the submitted definitions, as well as from other definitions given in the specialty literature, we will try to set out our own definition with reference to vocational training.

According to literature, vocational training can be rendered by: vocational training, professional development, requalification and multiple qualifications, terms presented below.

*Vocational training* represents the set of processes through which employees acquire in an organized environment, knowledge, skills, abilities and behaviors necessary for the exercise of specific occupations of the company [3, p.52].

*Professional development* is the set of processes through which employees enrich their knowledge, skills, abilities, behaviors and work techniques, following an organized program, in which they already have a basic qualification, in order to achieve a higher level of their objectives and tasks to which they are assigned [4, p.354]. Therefore, we can consider that professional development is oriented rather towards future needs, than the immediate ones and that concerns more career progress and less current performance.

*Requalification* represents the set of activities, through which people with a certain professional qualification acquire another qualification. This is determined by the fact that the person with a certain qualification has no longer any chance on the labor market to find a certain occupation, which requires him/her to change the qualification, by acquiring some theoretical knowledge and practical skills different from those which he/she possesses at that time, but with a higher probability of being able to enter the labor market.

*Multiple qualifications* assume the obtaining of additional qualifications compared to the basic trade or profession for the purpose of multilateral staff training, in order to be able to work in several trades that are part of a broader profile.

In contrast to staff training, human resource development is a much more complex activity, which takes place over time. If staff training is carried out in a certain period of time necessary to acquire theoretical knowledge and practical skills, which allow the employee to perform certain work tasks, then staff development takes place permanently during the employee's activity and aims the improvement of knowledge and skills he possesses in order to face the new challenges the company undergoes to. Although, staff development refers more to management staff (managers), this activity can be attributed to other categories of staff (specialists, technicians, etc.), who wants to advance on a hierarchical scale.

Staff development involves improving the professional performances of employees and developing their intellectual potential in order to take on greater responsibilities in the future.

The most well-known method of evaluating the effectiveness of training and learning programs used by companies is Donald Kirkpatrick's 4-level model, being considered a standard in human resource training. This shows students' reactions to learning and behavior change to the desired results, being a simplified model of training effectiveness, without taking into account the influences of the context in which it takes place and the factors that may influence efficiency before, during or after the course. [5, pp.259-279].

Referring to professional skills, G. Le Boterf considers that contextual evolutions, work organization, the development of new information and communication technologies, as well as the evolution of research on learning processes and cognitive functioning, necessarily lead to a concept of competence: which is not limited to punctual skills, but takes into account the ability to manage increasingly complex professional situations. To be competent does not only mean to know how to execute an operation, but also to know how to act and react in a particular context, to know how to deal with the unpredictable and the unprecedented; which answers the question: *What does it mean to act competently?* To act competently does not only consist of having 'resources' (knowledge, skills, culture, professional qualities, psychological resources, etc.), but also the science of combining them and mobilizing them in work situations; to differentiate between 'succeed' and 'understand. Being competent doesn't mean only being capable of an activity, but also being able to understand why and how you succeeded (or failed); taking into account that being competent doesn't mean only being able to act in a single context, but also being able to transfer or transpose competence in other contexts [6, pp.15-18].

## THE ANALYSIS OF NORMATIVE-REGULATORY DOCUMENTS IN THE DOMAIN OF HUMAN RESOURCE DEVELOPMENT

Undoubtedly, we can emphasize in any economic or social activity the special importance of the human factor. It is known the fact that human resource management is in the depths of human civilization. Still, the first representatives of mankind, who worked in different tribes, solved daily the problems of using physical and intellectual resources, quite modest, encountering in this process with work discipline, division of labor and motivation.

A training program is difficult to assess because the effect and direct benefits of a training course for civil servants and public administration is difficult to quantify. The appreciation of a training program is much easier when the results of the work are instantly visible and physically easy to identify, such as: reducing the number of typing mistakes or increasing the packing speed. But it is much more complicated to appreciate a program of training and development of managerial skills for civil servants in key positions, because the progress of the public institution is not only related to the leader or necessarily his managerial skills acquired through development programs but also by other factors (political, economic, socio-cultural factors).

Another factor that does not allow the development of civil servants is the reduced responsibility of the heads of departments / services / sections regarding their attributions to the process of training of subordinate civil servants, in most cases they consider that this task exclusively belongs to the human resource service and is not a part of the service obligations of the heads of departments / services / sections.

In most public administration reforms, one of the basic objectives is to reduce administrative costs by optimizing the staff. Thus, managers predict that they will have to perform the same or even more workload with the same number of staff or in the most frequent cases with fewer officials. And executive civil servants, in turn, realize that the new procedure will generate new responsibilities and additional efforts to be executed, without being rewarded for it. For this reason, both categories of civil servants are resilient to change and to the implementation of reforms. As a result of these resistances, additional costs are generated at best, or even worse, the total failure of the reform.

An important role in the process of administrative reforms and training of civil servants for this purpose is played by the *Regulation regarding the continuous professional development of civil servants*, which divides the training process into three types of training of civil servants. [7]:

**Self-Training** - according to the normative act quoted above, every civil servant is obliged to self-train, to improve independently his/her professional capacities and abilities in accordance with his/her duties and needs. The top managers of public authorities in the Republic of Moldova emphasize, in particular, this type of training, motivating that competition between officials stimulates them to self-train independently without incurring costs for the public authority.

**Internal professional development** - is organized by the public authority for its own staff, in accordance with the requirements and needs of the institution, often on its own, in case of need it may purchase training services within the budget available for this purpose.

**External professional development** - it is usually organized / coordinated centrally by the State Chancellery, ministries, other public authorities or development partners.

In order to improve the professional skills of civil servants and increase the quality of public services and to achieve the objectives and priorities of Government, this approved *the Training Program for Civil Servants for 2016-2020*[8].

The civil servant training program stipulates three sources of funding for the development of civil servants:

- the primary source of funding is from the public authority budget - minimum 2% of the salary fund;
- the second source of financing the training of civil servants - through the state order organized by the State Chancellery;
- the third source of funding - is provided by the development partners.

From our point of view, *the Training Program for Civil Servants for 2016-2020* has a positive effect on the development of human resource in public administration, which stimulated most public institutions to develop and approve their own internal plan for the development of civil servants within the public institution.

The internal development of civil servants within a public authority is carried out by two types of internal and external trainers. The internal trainers are the employees of the public institution, most of the times, the task of a trainer belongs to the top managers, heads of departments / services / sections or civil servants with a special qualification and experience.

The external trainers are physical or legal individuals who provide professional and personal training services in a certain domain, they are contracted, usually by competition.

The financing of these courses is made from the annual budget of the public authority in accordance with art. 37 of Law no. 158-XVI of July 4, 2008 regarding the civil service and the status of the civil servant [9].

The main state program relating to external professional development is the 'State Order regarding the professional development of civil servants' which is contracted and executed by the Academy of Public Administration. The annual number of civil servants who benefit from this program is very small, during the years 2016-2020, 6160 civil servants benefited from this program, out of the total of 32100 civil servants registered by the National Bureau of Statistics on January 1, 2019. 1232 civil servants participate on average each year, a very small number taking into account the technological progress and current requirements of the society. A negative factor of this program is the lack of transparency regarding the selection criteria of civil servants regarding the access to training programs and the lack of competition regarding the selection of trainers and training programs. [10].

Government has created a tradition of selecting the Academy of Public Administration of the Republic of Moldova as a trainer, without organizing a competition in this regard, motivating by the fact that it is the only institution specialized in training civil servants, thus reducing the competitive stimulus for the training of civil servants and consequently the quality of training programs decreases, which is to the detriment of the civil servant and public institutions.

The public authorities of the Republic of Moldova also benefit from a series of professional development programs financed by the external development partners, usually these are spent within the public authority by experts from the country and from abroad.

The training programs for civil servants provided by the external partners are often part of international development or exchange projects, they usually consist of several training tools, manuals, training courses, trainings and consulting in the territory through its experts and others.

## CONCLUSION

Human resource development is a fairly important activity in the activity of any organization, whether it is a public or a private one. The upper management, including that of public institutions, needs to be more and more aware of the need to invest in their own employees if they really want to perform and ensure their competitive advantage in comparison with other institutions.

One of the main factors discouraging public authorities from investing financial resources for the professional development of their officials is the lack of approaches that would demonstrate the link between the competitiveness and quality of public services provided and the quality of human capital held.

Therefore, appears the need to assess the competitiveness of enterprises and the quality of human capital, as well as to establish quantitative relationships between these two concepts.

The effectiveness of the institution is largely determined not so much by the efforts of some isolated individuals, but by the results of a joint work. In order for the institution to remain competitive, it is necessary to stimulate the collective entrepreneurship. Solving the complex, non-standard problems that institutions currently face, requires the joint effort of all employees who have different visions, skills and abilities. Thus, it is necessary to give priority to teamwork that results in higher effects compared to individual efforts. The team is not simply a group of random people, but a formation in which a series of specific relationships between its members appear. This can solve many problems without waiting for detailed instructions from the manager, as it can act as something autonomous that can: formulate tasks, organize activities and take responsibility.

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## PROBLEMS IN DOCTORAL STUDIES – CONFLICTS OR ADVANTAGES?

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***Abstract:** Each Doctoral Student encounters problems in collecting data and conducting surveys. There is no universal solution to these problems, but we can help ourselves with useful ones advice for research and innovation. Conflicts and problems accompany us everywhere in life, but here we will look at some of them that are found in the training of doctoral students. In this report, I will look at some common problems, conflicts and advantages in the training of doctoral students especially in Bulgaria.*

***Keywords:** study, organization, problem, conflict, advantage.*

**JEL CLASSIFICATION:** D74; L2; M14

### INTRODUCTION

Creation of competencies for solving economic problems usually depends on the quality of research. Young researchers are those generators of ideas who enrich the economic theory and practice, diagnose real processes and design specific alternatives for increasing economic growth by using the latest modern research methods and have an accurate assessment of the results achieved. The doctoral studies requires modern teaching methods, highly qualified supervisors and appropriate funding.

### RESEARCH AND INNOVATION IN THE EUROPEAN UNION

Investment in research and innovation is an investment in Europe's future. They help us to be globally competitive and to maintain our unique social model. They improve the daily lives of millions of people in Europe and around the world and contribute to solving some of the biggest social challenges.

European Union support for research and innovation promotes the cooperation between research teams across countries and disciplines, which is crucial for making revolutionary discoveries.

Through its multiannual framework program for research and innovation, the European Union provides us with many funding for:

- Strengthening the position of the European Union in the field of science;
- Strengthening industrial innovation, including investment in key technologies;
- Responding to major social challenges such as climate change, sustainable transport and renewable energy;
- Ensuring that technological breakthroughs become viable products with real trade potential – by building partnerships between industry and governments;
- Strengthening international cooperation in the field of research and innovation.

## **NATIONAL STRATEGY FOR DEVELOPMENT OF SCIENTIFIC RESEARCH IN THE REPUBLIC OF BULGARIA 2017 – 2030**

The National Strategy for Development of Scientific Research in the Republic of Bulgaria defines the objectives and the respective measures and actions on the part of the State for research development for the period 2017 – 2030.

The Strategy is one of the necessary conditions for achieving the objectives set out in the Partnership Agreement of the Republic of Bulgaria with the European Commission in the programming period 2014 – 2020. The Strategy is in line with a number of national and European documents.

### **PROBLEMS IN DOCTORAL STUDIES IN BULGARIA**

According to Wikipedia: A **problem** is a situation preventing something from being achieved. The word comes from a Greek word meaning an "obstacle" (something that is in your way). Someone who has a problem must find a way of solving it. The means of solving a problem is called a "solution".

According to Colin's dictionary: A **problem** is a situation that is unsatisfactory and causes difficulties for people.

In our case I will look at some problems I encountered while teaching doctoral students in Bulgaria.

1. The first difficulty is in determining the topic of the doctoral thesis – From doctoral student is expected to determine the topic of the dissertation in the first month after enrolment. If the doctoral student has any experience, this is not a problem. But, if it comes straight from the student bench, it is very difficult to orient oneself in the matter and subject matter of something new and unknown.

2. The second problem is the preparation of the individual study plan of the doctoral student - It is normal for doctoral student to have difficulty, as he has no experience in this. Nobody taught us this at the university and without the valuable help of the supervisor there is no way for the doctoral student to deal with it alone.

3. Another significant problem is that taking the obligatory doctoral exams requires a lot of time and energy, but the grades are not included in the overall assessment of the doctoral thesis. These exams are usually between two and four in number and take the first year of study.

4. Funding doctoral studies:

- the remuneration of the supervisor: Supervisors should be sufficiently motivated to carry out this highly qualified work with desire and enthusiasm. It is obvious that they are not currently receiving adequate remuneration for this. This reduces the quality of work, respectively the quality of training of doctoral students in Bulgaria;
- lack of funds for practical training of doctoral students, especially those in economic disciplines: Here is no practical training in the curricula of doctoral students. At the same time, no company is willing to admit doctoral students to do survey or research. How then do we want to get good results?;
- the fee for the public defence: when the defence is held within the specified time frame, the fee is covered by the university if the doctoral student is full-time or part-time, otherwise it must be covered by the doctoral student;

- lack of connection between the scholarships received by doctoral students and the fulfilment of the obligations under their individual study plans: Nobody cares how the doctoral student is doing, whether he will have a successful public defense. The state invests in the training of doctoral students, but this is not tied to feedback: what is the success of the training of doctoral students in full-time education, how many of them actually complete their dissertation and obtain a doctorate.

## **CONFLICTS IN DOCTORAL STUDIES IN BULGARIA**

**Conflict** is [serious](#) disagreement and [argument](#) about something [important](#). If two people or groups are in conflict, they have had a serious disagreement or argument and have not yet [reached agreement](#). The concept of **conflict** includes: conflict, contest, combat, fight, affray.

**Organizational Conflict** or otherwise known as workplace conflict, is described as the state of disagreement or misunderstanding, resulting from the actual or perceived dissent of needs, beliefs, resources and relationship between the members of the organization. At the workplace, whenever, two or more persons interact, conflict occurs when opinions with respect to any task or decision are in contradiction.

It can be said that the conflict is a special case of the problem.

Taking into consideration the definition of „**conflict**” in the Bulgarian Monolingual Dictionary as „collision, a clash of forces, interests”, these conflicts are:

- Inequality between full-time and part-time or independent doctoral students – The conflict is in receiving a monthly scholarship only from doctoral students in full-time education;
- Significant resources are needed to conduct practical research – It turns out that doctoral students in part-time or independent form of study must finance their own research;
- More opportunities and resources are needed for publishing the research results – PhD students are forced to look for opportunities for publications without a participation fee. As a result this may be at the expense of quality;
- It is difficult to find a company or organization that is willing to allow a doctoral student to carry out practical research related to the dissertation – Everyone uses personal contacts and acquaintances to gain access to data from real companies and organizations;
- Difficult communication between the supervisor and the doctoral student, as supervisors usually do not feel motivated enough for this activity – Adequate and decent pay for this highly qualified work must be offered.

## **ADVANTAGES OF DOCTORAL STUDIES IN BULGARIA**

The definition of **advantage** means anything that provides a more favorable position, greater opportunity or a favorable outcome.

The advantages of studying doctoral students in Bulgaria can be summarized as follows:

- People studying for a doctoral degree usually have academic ambitions – Most who already own doctoral degree start to work as university lecturers;
- Some may also see the doctoral degree as a chance for a better job or position in the corporate sector – There are already many such cases;

- The advantages of doctoral degree studies in Bulgaria are: relatively low tuition fees; a monthly scholarship for full-time doctoral students of about 250 euros; access to university facilities: dormitories, libraries, gyms, etc.
- Doctoral students in Economics, Management and Finance almost always find a job after that – It can be said that this is a matter of prestige;
- The doctoral degree gives an exceptional career advantage in multinational companies at high-level positions;
- Possessing a doctoral degree is an advantage in expert roles in many ministries and institutions.

## **CONCLUSION**

Doctoral studies prove to be the steadiest path to career advancement in many organizations with a firm personnel policy.

Research is essential in doctoral studies.

The goal of each doctoral student is to contribute to growth and development through research and innovation.

There are many problems and conflicts related to doctoral studies, but there are many advantages and opportunities after completing the degree.

Therefore, everyone who has chosen to study this degree must be persistent, pursue their goals and be convinced that the efforts worth it!

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## METHODS OF EVALUATION OF THE ECONOMIC EFFECT IN MOBILE APPLICATION DEVELOPMENT PROJECTS

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**Abstract.** *There is analyzed the methods for determining the economic effect in mobile application development projects. Implementing an IT project can be considered an investment project, but the economic result is less obvious and higher risks. IT project is much higher, as it has in mind not only the initial investment of financial resources, but also after implementation stages. It must be a mandatory requirement before the implementation of any business case project, finding an effect that can be determined using an appropriate evaluation method. The practical significance of the paper is that the research results obtained can be used in various IT projects.*

**Key words:** *quality, efficiency criteria, basic indices, efficiency of investment, mobile application.*

**JEL CLASSIFICATION :** M310, M370, M150, C61

### INTRODUCTION

The penetration of Information and Communication Technologies (ICT) led to major economic and social changes, due to the rapid development of new ways of communication, processing and storage of information. The evolution in question imposed the notion of Information Society, which is considered a post-industrial society, which also appears as a result of globalization, and information and knowledge, as well as the degree of their penetration is one of the basic competitive advantages of countries. As a result, many of the underlying transformations are undoubtedly associated with a set of interdependent and, more recently, convergent technologies that have come to be known as ICT. The ICT sector includes four types of industries: information technology, telecommunications, production and trade. The sector provides the country's infrastructure, contributes directly (the activity itself) and indirectly (through the created infrastructure) to the creation of GDP, and respectively to the well-being of the population. The success of any business depends on the quality of the management of its resources. The issue of efficient management is more current in the conditions of limited resources, which are more acute in times of crisis. The efficiency of ICT management is important not only for the companies operating in the sector, but also for the economy of the country as a whole. The costs they incur and, in particular, the way in which they are managed have a direct impact on the formation of tariffs and the costs of ICT services, which as a result have an impact on the degree of their use.

In recent years, mobile applications have found use in various fields such as health, business, social networks, leisure, travel, news, etc. The popularity of mobile applications is due to the mobility with which these devices are activated that provide services regardless of the user's location. But, mobility is associated with a number of problems, such as: reduced resources, limited energy and poor connection [1].

The development trends of Information Technologies (IT) have led to the situation that nowadays, the modern generation is oriented, first of all, on the use of mobile devices, which have become more and more powerful and are available for humans in all activities. Nowadays, it is difficult to imagine a person without a mobile device. Whether it's a phone, smartphone or another communicator.

With the advent of new mobile devices, the variety of platforms on which mobile applications are developed (Android, Symbian, Bada, iOS, iPhone) have begun to develop.

Due to the rapid evolution of technology and the need of people to have as close as possible all the necessary applications, the use of mobile applications has become very widespread. These, by their size and the need to realize as a citizen-oriented application represent a new category of applications as opposed to the usual ones for computers or laptops, or web applications. Mobile applications depend very much on the features of the device, the device platform, and the operating system deployed on the mobile device.

The functions of mobile applications do not differ much from the functions of sites, both provide information about the proposed company goods and services. The main difference between the mobile application is that it offers many more opportunities to present information to consumers. The mobile phone is always with the user, and if it is connected to the Internet, the owner of the mobile device may always be interested in a specific business offer. And the user does not have to go to the site, open a browser, enter the address, instead of clicking on the shortcut of the mobile application.

The active growth of the mobile device market contributes to the growth of another market, namely mobile applications. The global economy of mobile applications is growing every year. At present, according to statistics [2] for 2020, more transactions have already been evaluated than in 2019.

**The purpose** of the article is to evaluate the efficiency of investments in mobile application development projects. To achieve this goal, it is necessary:

- analysis of types of applications for mobile devices;
- technologies for creating mobile applications and technological constraints in the development of mobile applications;
- how to evaluate the effectiveness of mobile application creation projects.

## **COPNCEPT AND MOBILE APPS CATEGORIES**

Starting with 1990's different operating systems are developed that could support mobile devices as phone, watch, tablet etc. Shortly different mobile operating system release candidates began to be promoted, as well as other type of applications that were incorporated. Such small attempts gave the beginning of mobile apps development direction, later on the current mobile apps markets.

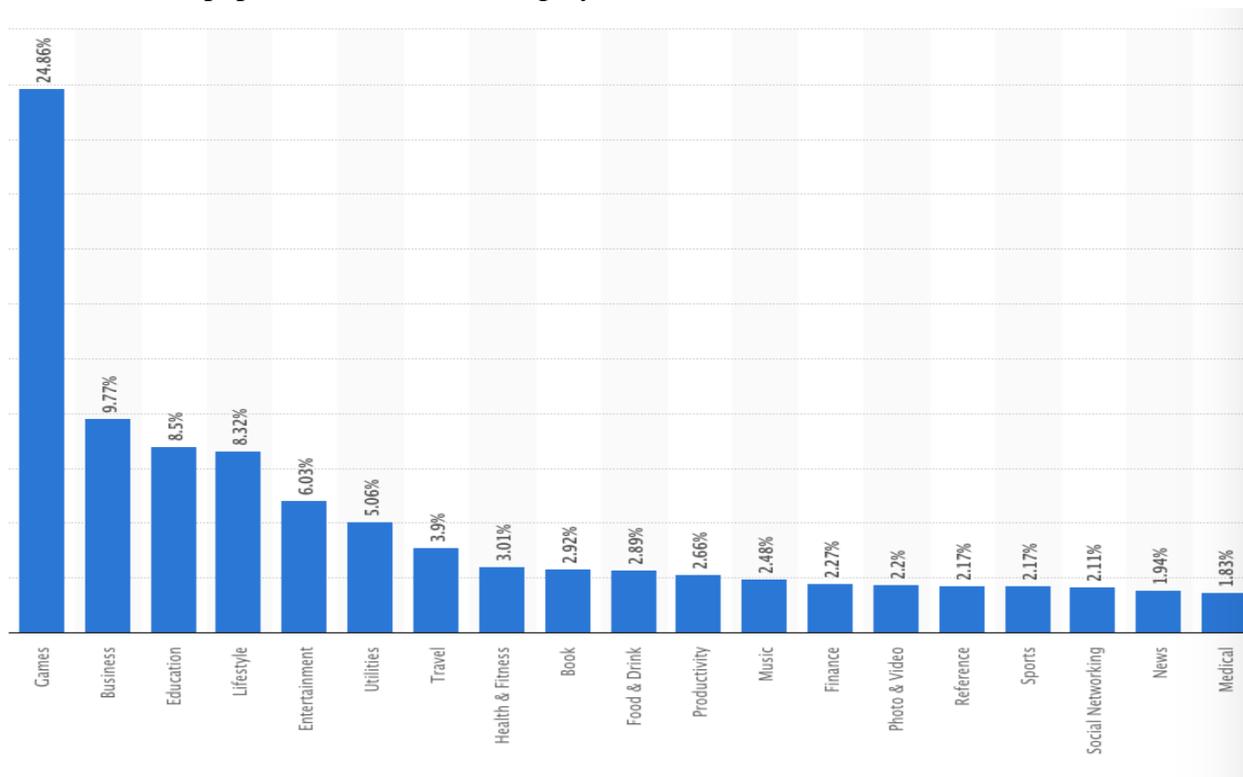
These mobile applications were limited, mostly because of limited hardware resources and battery optimization. Due to different types and big amount of these apps, there were agreed to make some categories for each of them. In current mobile markets they are as in the following Figure 1.



**Figure 1. Major mobile apps categories**

Source: developed by authors

The number of mobile applications on some categories is systematized in Figure 2 [2]. As we can observe, the most popular is the Games category.



**Figure 2. Mobile apps categories**

Source: [https://buildfire.com/app-statistics/\[2\]](https://buildfire.com/app-statistics/[2])

### **A. Lifestyle**

Mobile applications in this category are a strong and widespread source of influence. They can attract users of different ages, from minors to the elderly. The most common subcategories are music applications, dating, proper nutrition, fitness and travel. For example, this category includes applications such as: Spotify, TripAdvisor and Uber.

### **B. Social Media**

Social media applications are some of the most popular. Many social network users access them every day. Facebook alone reports over a billion active users daily.

Of course, many would like the ease of access offered by mobile applications. Social media applications need to be fun, fast, and continuously integrate the expanding features of the social networks they support.

Today's society shares more information about everyday life than ever before. For this reason, even applications, which do not necessarily fall into the Social media category, may include social sharing features. For example, the popular running and cycling application, Strava, allows you to not only track activities, but also compare statistics with other people on the network. Essentially, a partnership or even an entire online running team can be formed.

Many other applications allow you to share a product, a high score, or a news article with the social network. They make it easy for users to share something they feel passionate about with other users without having to leave the app. For example, adding a user to social sharing features in the app, providing a service, or selling a product allows other users in the group to share it on their networks. This feature will keep users coming back again to share new information on their networks.

Some common social media applications are: Facebook, Instagram, Pinterest and Snapchat.

### **C. Utility**

Utilities are mobile applications usually used without considering them applications. Many of them are pre-installed on the mobile device, performing a single function. Some examples of common types of Mobile Utilities applications are: Computer, Flashlight and Weather Forecast.

These are frequently used mobile applications, but for shorter periods of time. Normally, the Calculator utility will open only to perform an elementary calculation.

### **D. Games/Entertainment**

Games are one of the most obvious categories of mobile applications, requiring less explanation. Applications related to this category are widely used and, as a rule, very competitive. They are also popular among developers, as they bring users back several times each week, and sometimes even several times a day.

In the most successful games, both the frequency and duration of the game are high. More "addictive" games are gaining ground, providing incentives for users to return daily or for a number of days in a row. Some examples of gaming applications are: Angry Birds, Clash of Clans, and Subway Surfer.

### **E. Productivity**

Although Productivity mobile apps may seem more boring at first glance, they are incredibly popular. Such applications help users to perform a certain task quickly and efficiently. Well-known examples are many of Google and Apple products, such as Docs, Sheets and Wallet / Pay.

### **F. News/Information**

News and information applications are relatively simple. They provide users with various news and topic-oriented information in an easy-to-understand form. Examples are the applications: BuzzFeed, Smartnews, Google News & Weather, Feedly, Flipboard, Yahoo News Digest, Reddit and LinkedIn Pulse.

## **TECHNOLOGIES FOR CREATING MOBILE APPLICATIONS**

There are many possibilities to create mobile applications. The world market is dominated by platforms based on **Android** operating systems, developed by the Open Handset Alliance, which is sponsored by Google, and **iOS**, developed by Apple. These two large platforms are based on mobile application development technologies that can be grouped into three categories: Native, Hybrid and Web.

**Native Technology** by name intuitively that it uses the same programming tools and languages as those used by the creators of these platforms. Usually, to develop an application, you need two native developers or one, but who possess both programming technologies.

For the Android platform, such basic tools are used as:

- IDEA Android Studio (provided by Google itself and IntelliJ);
- C / C ++ / Java / Kotlin programming languages.

For the iOS platform, such basic tools are used as:

- XCode (provided by Apple itself);
- C / C ++ / Objective-C / Swift programming languages;
- A workstation running on OSX provided by Apple (for example Mac, Macbook, Mac Mini, etc.).

**Hybrid technology** is a platform that allows the development of Android and iOS applications in parallel, using the same code base. This platform is a bridge between components developed using

native technology and the interface to other technologies, usually the Web. There are a lot of such platforms, supported by such companies as: React Native - Facebook, Flutter - Google, Xamarin - Microsoft, Ionic and others. The biggest advantage of Hybrid technology is the support and maintenance of a single project; another advantage may be lower development costs depending on the task developed. But after performance it gives way to Native technology.

**Web technology** is represented by technologies used in Web applications that can run on screens with small dimensions and resolutions, usually presented through an iFrame of an elementary mobile application.

## **METHODS OF EVALUATION OF THE EFFICIENCY OF MOBILE APPLICATIONS**

IT projects can be optimized by accelerating the process of implementing new information technologies (IT) and reducing current costs. Using modern IT in the realization of IT projects, including in mobile application development projects ensures the achievement of the stated goal, but at the same time unforeseen expenses may occur, associated with underestimation of risks.

Therefore, for the initiation and execution of any project for the development of mobile applications and not only, it is necessary to optimize the activities and tasks of the project, performing a competent approach of financial analysis of all resources.

There are a number of techniques and methods of financial management analysis that can be used to evaluate the content of IT projects in general, as well as for various mobile and individual application development projects in particular. The main indicators that can determine the efficiency of mobile application development projects are the data on the costs of carrying out the project and its implementation as well as the sales forecasts.

Thus, for an initial evaluation of mobile application development projects, such activities as:

- determining the target group (potential customers) as well as its demographic and economic characteristics;
- determining the percentage of customers in the target group who would need to use the mobile application;
- determining the percentage of failures of other applications and mobile devices;
- determining the percentage of repeated visits from mobile devices and stationary computers;
- questioning the customers of the target group and identifying the need for a new mobile application that would contribute to further sales growth as an innovative approach in organizing the promotion of services, for processing business transaction estimates, etc.

The evaluation of mobile application projects can be performed using such indicators as [4, 5, 7]: Total Cost of Ownership (TCO), Economic Value Added (EVA), Total Economic Impact (TEI), Scorecard (BSC), Rapid Economic Justification (REJ), Information Economics (IE), etc.

### **Total Cost of Ownership**

The most effective mechanism for estimating the IT infrastructure cost of IT projects is the "Total Cost of Ownership" (TCO) [3, 6]. This technique was created by the Garther Group in the 1980s' [6], although some experts believe that the concept (term) dates back to Napoleon's time when "engineers began to pay close attention to issues such as the effectiveness of cannons and how easy they are. were moved and repaired and how long they lasted in active use"[6].

**The total cost of ownership** involves determining the cost of software implementation and maintenance, cost analysis for the IT structure and its individual components. The TCO indicator is

a calculation designed to help people make better-informed financial decisions by analyzing the total cost from purchase to disposal, including expected costs that will arise over the life of the product, such as services, repairs, and insurance.

TCO is an analysis designed to discover all the living costs of a project. As a result, TCO is sometimes called "life cycle cost analysis".

When assessing TCO, there are four types of costs [3, 10] that need to be considered:

*1) Purchase costs*

The category of acquisition costs includes direct costs related to the costs of procuring the hardware and software resources required to carry out the IT project. It is usually accounted for as a capital expenditure in the project budget and may be impaired over time. In order to determine the total acquisition cost, human resources (specialists) are needed to evaluate different suppliers or solutions.

In addition, the acquisition cost may include the prerequisites to allow the new technology to function properly, such as new equipment to support a new software platform or the purchase of upgrades to existing software and equipment. In fact, any single purchase should be accounted for at the cost of acquiring the technology.

*2) Implementation costs*

The costs in this category generally consist of installing equipment, software and connecting to the network. Usually, most of the implementation costs are offset by the project staff. In some cases, people may be hired to oversee the implementation and maintenance of software and equipment and necessary.

Also in the category of implementation costs are included the costs of training users with the new technologies used in the implementation of the project.

Depending on the accounting interpretations, a large part of the implementation cost can be treated as a capital expenditure and is often the highest visible cost of a project, especially when external consultants are used to carry out the implementation.

For the implementation of IT projects are borne costs related to the payment of various fees to be considered, the procurement of additional licenses for implementing partners, as they will need their own login details.

As with acquisition costs, implementation costs are generally one-off expenses.

*3) Operating costs*

Although often not very visible but in the planning of IT projects, there are permanent costs incurred to maintain a new solution and long-term operation, as well as to reduce it to additional users. These are known as operating costs.

Operating costs include warranties, support contracts with external suppliers, ongoing license costs and, occasionally, upgrade costs. Any IT project must be able to anticipate these recurring costs based not only on current data but also on the future state of the organization.

In addition to the licenses required to implement hardware and software solutions, there may be a need for licenses for other applications. This could include a form solution, a payment processing solution, an email marketing solution and more.

In addition, the planning of future costs must take into account the staff resources needed to meet the needs of the IT project.

#### 4) Improvement costs

The use of new functionalities, arrived in IT or additional projects, the transition to a higher level of the project, the implementation of several features can generate improvement costs. Custom development and integration with older systems also create necessary costs.

An easy-to-implement solution would be to take a certain percentage of the operating costs that are budgeted as improvement costs, because it corresponds to reality.

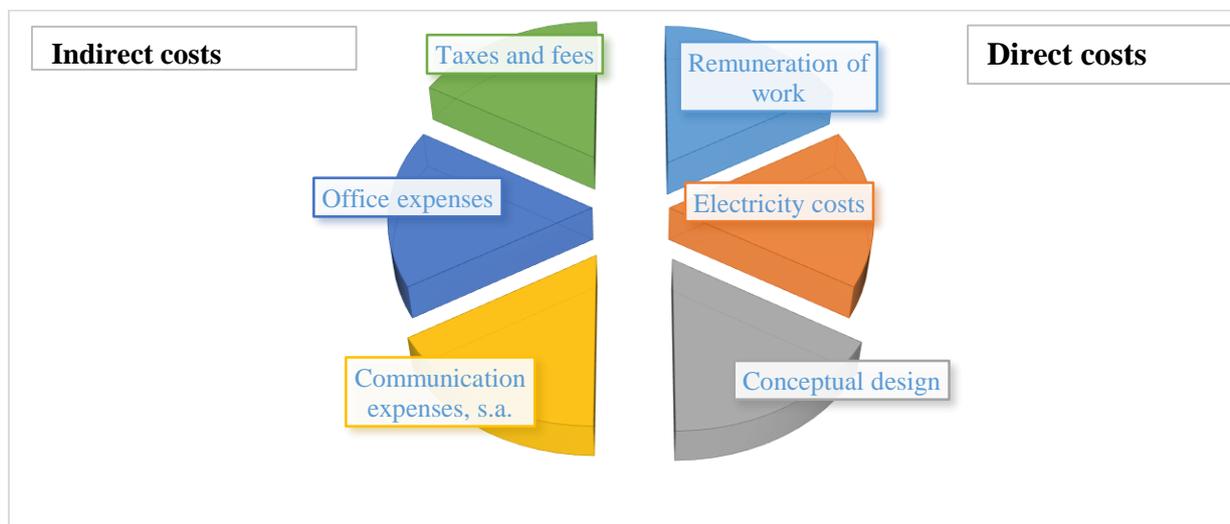
To estimate the TCO for a project, the sum of all costs to be taken into account for each year of the chosen lifetime is calculated.

Costs, which must be taken into account in the evaluation of any IT project, can in turn be classified into: direct costs and indirect costs. These two classifications are useful for separating expenses in order to determine the various types of cost (production, complete), respectively for presenting the information in the profit and loss account with the classification of expenses by function.

**Direct costs** are the costs that are directly related to the realization of the IT project. A project to create a mobile application includes such direct costs as: remuneration of employee work, software costs and basic equipment and raw material costs that can be directly associated in the production of the mobile application.

At the same time, financial costs may arise during the implementation and development of IT projects; such costs are called **indirect costs**. Indirect costs cannot be directly associated with the process of developing an IT project or with the production of goods and services, but with the entire business operation.

All IT project costs are recorded in the accounts based on the primary documents and, in part, in the IT project development budget (Fig. 3).



**Figure 3. Cost constituents of IT projects**

*Source: prepared by the authors*

Overall, the indirect costs for a mobile application project include:

- user self-training if the company's computer systems are used;
- computer and software usage service, providing assistance to colleagues working on the project;
- expenses for securing the related equipment purchased;
- office and communication expenses;

- rental expenses;
- taxes and afferent taxes, etc.

This technique of direct and indirect cost analysis is the main or integral part of the significant number of quantitative methods, thus offering the possibility to carry out a qualitative evaluation of the efficiency of the IT project infrastructure.

#### **A. Economic Value Added**

In recent years, traditional management, based on the analysis and interpretation of accounting data, has proven its inability to evaluate and express, in the clearest and most accurate way the real performance of projects. The root cause is that accounting data have been shown to be characterized by subjectivism and lack of transparency and do not provide certainty in making the best investment decisions when taken as a decision-making basis [7, 8].

Under these conditions, a change was imposed in the attitude of project managers towards emphasizing from maximizing revenues to maximizing the value of IT projects, from the use of accounting data to the use of cash flow dynamics.

Economic value added (EVA) is the surplus value, created by an investment or an investment portfolio; it is determined by the excess return obtained by exploiting an investment in relation to the size of the total cost attracted to finance that investment. Thus, EVA is equal to the difference between a company's net operating profit (after taxes) and expenses incurred as a result of implementing or improving IT infrastructure:

$$\text{EVA} = \text{NOPAT} - \text{CMPC} \times \text{Total capital} \quad , \quad (1)$$

where:

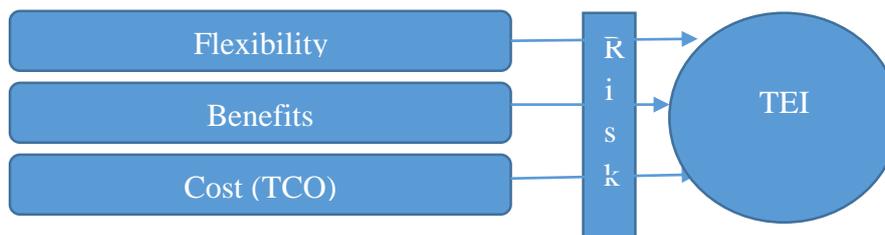
*NOPAT* – net operating profit after tax;

*CMPC* – weighted average cost of capital.

The EVA indicator offers the possibility to measure the financial condition of an IT project, calculating the real economic income. The results of this indicator can be analyzed only by analyzing the EVA changes over time, depending on the nature of the activity carried out within the project and the efficiency of the use of the necessary resources in the execution of the project. Thus, in order to estimate this indicator, the market value of the capital invested in the IT project should be considered, excluding that part of the value that is supported by the investors' expectations regarding the future performances. For example, the result of the implementation of the Buzzfeed mobile application appeared after 2-6 months of operation. For all launched mobile applications, there is a significant temporary difference between when a particular system is launched or when existing business processes change and when the EVA indicator changes.

#### **B. Total economic impact (TEI)**

To calculate the cost of the IT application, it is appropriate to use the methodology for calculating the total economic impact (TEI), proposed by Forrester Research [8, 9]. The process in question is considered quite time consuming, and its use is more appropriate in a situation of evaluating the effectiveness of several alternative project plans. TEI evaluates the project of implementing the components of the company's IT system in terms of such parameters as "Cost", "Benefits" and "Flexibility" (Fig. 4).



**Figure 4. Method of determining the cost of the IT project**

„**Cost**” is a quantitative unit of value calculated using the TCO method.

„**Benefits**” clearly shows whether the capabilities of the launched component of the IT system meet the requirements of the project.

Additional functions, which occur during the training of company staff as a result of the implementation of the IT project, should be subject to an objective assessment, such as increasing the productivity of workers involved in IT development processes and their influence in identifying project risks.

The "Flexibility" indicator characterizes the complexity of the IT project implementation process and estimates the costs required to add a new component to the project structure. For example, the need to change the organization system is analyzed if there are sufficient opportunities for settings and connections of its components to the existing system, the need to adapt it, etc.

The final stage of the TEI methodology consists in the analysis of the risks, resulting from the acquisition, implementation and operation of the components of the IT project.

Thus, the method of calculating the total economic impact is based on the formulation of the main and secondary objectives of the IT project and the elaboration of strategic development plans.

### **C. Scorecard**

For the elaboration of strategic development plans, it is recommended to use a balanced score (Scorecard - BSC). This technique was developed by Robert Kaplan and David Norton from Harvard University, in order to create a qualitative approach for evaluating the effectiveness and infrastructure of the IT project as a whole [7].

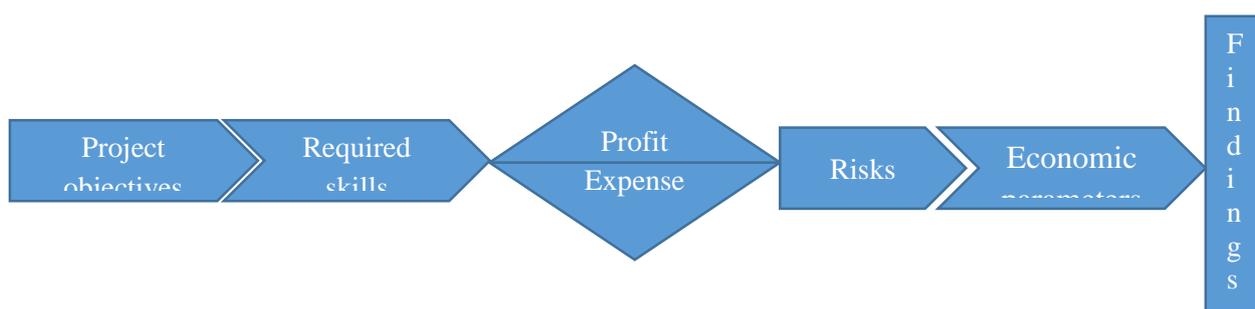
The main steps in using the BSC method are the following:

- strategic formalization of ongoing project objectives;
- determining the direction of the activities necessary for the implementation of the strategic objectives of the projects;
- setting tasks that require decisions for each direction;
- determining the relationships between the tasks performed and their influence on the achievement of the objectives of the new implemented project;
- formalizing the performance criteria for each task: for example, the result of a certain task should lead to a 15% reduction in the deadline for the application of IT services;
- concretization of project implementation programs - allocation of financial and human resources, establishment of an area of responsibility for fulfilling tasks;
- project implementation;
- revision and correction of performance indicators (possible return situation from the stage of formalization of performance indicators to the stage of formalization of a strategic objective).

It should be noted that the BSC method is primarily a tool for training management strategy and can be used as part of an IT-oriented process management technique.

#### D. Rapid Economic Justification

The rapid economic justification, proposed by Microsoft [6, 8], is a development of the TCO methodology by establishing the conformity of expenditures with the IT project. The basic idea of the REJ method is to approach the IT project in terms of customer priorities, basic economic indicators and its strategic development plans (Fig. 5).



**Figure 5. Rapid business case study**

*Source: prepared by the authors*

The successive stages of the REJ technique are:

- determining the relationship with the objectives and basic parameters of the IT project to the business objectives of the company (this stage is similar to that of the BSC method);
- selecting a solution based on "Required Capacities";
- calculation of profit and expense, using the "Aggregate" methodology the cost of ownership;
- identification of project risks, depending on compliance parameters;
- calculation of the economic parameters of the implementation project with the involvement of the calculation method "Net Present Value" (NPV), "Internal Rate of Return" (IRR), "Economic Value Added" (Economic Value Added) - EVA), Return on Investment (ROI) etc.

The REJ technique more than just helps to find a common language for IT professionals and business, it is a tool that allows the evaluation of the IT contribution to the result of the company's business. However, this technique is a relatively complex assessment tool and also does not allow the assessment of the IT infrastructure as a whole.

#### E. Information Economics

If it is necessary to give priority to design criteria before considering an IT project, the method called Information Economics (IE) applies. IE is a qualitative method for evaluating an IT project or project portfolio, which involves the formation of specific project performance measures and their analysis in terms of potential benefits. This process involves organizing a group, including IT specialists, managers and risk managers, evaluating the effectiveness of the IT project. This group develops 10 key factors that determine the profitability of the proposed project. Next, an assessment is made of the relative significance of each of the factors ('plus') and risk for each of the factors ('minus'). As a result, a rating of the project is developed in terms of its importance for the main business processes of the organization.

Regarding the use of the IE method for project portfolios or the choice of an alternative implementation option, IE evaluations need to be compared.

## **CONCLUSIONS**

This article reviewed the types of software used to produce mobile devices and the technologies used to create mobile applications, as well as how to evaluate the effectiveness of IT projects with regard to the development of mobile applications.

An IT project is considered acceptable for investment if it is reliable, financially feasible and meets certain well-established standards. When evaluating a project, a large number of indicators are used, some of which are mentioned in this article, which allows the correct evaluation of their effectiveness.

The use of indicators for the effectiveness of IT projects is necessary, as both the commercial efficiency of the project and the social impact can be identified, taking into account the assessment of the impact of inflation, risk and uncertainty on the success of the investment project.

It is clear that the existing methods and approaches for assessing the effectiveness of investment projects have their own shortcomings, even having common disadvantages, such as the description of methods for assessing effectiveness in too general terms, with the expectation of investment analysis professionals. Consequently, non-specialists in the field must study the scientific literature before they can make a qualitative assessment of the effectiveness of an investment project. In this sense, it becomes obvious that, nowadays, it is necessary to develop new models and methods to evaluate the feasibility of investing in a project, based on mathematical models in the form of an optimization problem.

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## MATTERS RELATED TO THE RECOGNITION AND MEASUREMENT OF ELEMENTS OF ACCOUNTING UNDER THE TERMS AND CONDITIONS OF PUBLIC-PRIVATE PARTNERSHIP CONTRACTS

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***Abstract.** The recognition and measurement of elements of accounting are matters of paramount importance requiring special attention both upon establishing the legislative bases and during their practical implementation. Following the enactment of the NAS new amendments, issues and uncertainties often emerge in the accounting practice related to the recognition and measurement of elements of accounting during the business process. Against this background, the Author aims to research the current issues concerning the recognition and measurement of assets, equity, liabilities, proceeds, costs, expenses under the terms and conditions of public-private partnership contracts.*

***Keywords:** elements of accounting, recognition, measurement bases, term of use, public-private partnership.*

### **JEL CLASSIFICATION: M-41**

### **INTRODUCTION**

The recognition and measurement of elements of accounting are phases of the entity accounting cycle. Sooner or later, any entity aiming to do business shall deal with the recognition of elements of accounting. The National Accounting Standards (NAS) lay down single and binding rules for the recognition and measurement of certain elements of accounting, as well as the content of the information to be disclosed in financial statements. While applying the new NAS amendments, in force as of 1 January 2020 [8], issues and uncertainties often emerge in the accounting practice related to the recognition and measurement of elements of accounting during the business process. Hence, the research of issues related to the recognition and measurement of elements of accounting is topical and of interest from the theoretical and practical standpoints.

The recognition and measurement bases of elements of accounting under public-private partnership contracts is governed by the provisions of Directive 2013/34/EU of the European Parliament and of the Council of 26 June 2013 [1] (hereinafter referred to as Directive 2013/34/EU), International Accounting Standards (IAS) [2,3,4], NAS [13], Accounting and Financial Reporting Law of the RM No. 287 dated 15.12.2017 [7] (hereinafter referred to as the Accounting Law), Methodical indications with respect to accounting peculiarities in the process of implementing public-private partnerships dated 01.01.2019[6] (hereinafter referred to as Methodical indications).

Some of the aforementioned issues related to the recognition and measurement of elements of accounting have been researched in the specialised literature by Nederita A. [10], Popovici A. [11], Foalea L. [9], etc.

The research pursues the goal to identify the recognition criteria and measurement bases for elements of accounting under the terms and conditions of public-private partnership contracts

(hereinafter referred to as PPP), as well as to lay down recommendations in light of the amendments and addenda to the legislation in force.

## APPLIED METHODS

The research is based on a deductive approach, from general to particular, drawing on the current phase of knowledge of practical and theoretical matters related to the recognition and measurement of elements of accounting. Items inherent to economic subjects, including observation, selection, grouping, comparison, etc. have been also used.

## OUTCOMES AND DISCUSSIONS

The general framework used to draw up and submit the financial statements defines recognition as the process of embedding an element into the Balance Sheet or into the Statement of Profit and Loss, which meets the recognition criteria/principles.

According to the Accounting Law, **recognition** means the recording in accounting ledgers and disclosure in financial statements of an element of accounting, which matches the definition and meets the recognition criteria set forth in the Accounting Standards [7, Art.3, paragraph 1].

The IASB (International Accounting Standards Board) framework defines recognition as a process incorporating an element into the Balance Sheet or in the Outturn Statement, which meets the definition of a subject and matches the following criteria:

- *probability of future economic benefits* – refers to the level of uncertainty with which the future economic benefits associated to the element of accounting would generate inflows or outflows for the entity;

- *reliability of measurement* – implies that the recognised element of accounting has a cost or value that can be measured reliably [5, p.27].

To be recognised, each element of accounting shall be assigned a determined value. Such approach is called measurement, and shall be performed differently depending on the object it refers to and the time it is performed.

In the national legislation, **measurement** is an approach used to determine the value of elements of accounting [7, Art.3, paragraph 1]. Hence, measurement is an accounting approach used to measure and determine the value of existing assets, their movement and transformation, as well as the operations related to the movement of those elements.

According to the Accounting Law, the **elements of accounting** represent the assets, equity, liabilities, proceeds, costs, expenses and economic events performed by an entity [7, Art.3, paragraph 1].

According to the provisions of IAS 39 "Financial instruments: recognition and measurement" [4, paragraph d], all elements contained by a financial statement shall be measured:

- *at least once during the initial recognition (proceeds and expenses); and*
- *subsequently to be disclosed in financial statements.*

On the basis of the reviewed sources, some core matters would be tackled related to the recognition and measurement of elements of accounting under the terms and conditions of PPP contracts.

**Property, plant and equipment.** Although the European and international accounting regulations do not contain express provisions regarding the recognition and measurement of property,

plant and equipment items under the terms and conditions of PPP contracts, the entities are guided by NAS "Intangible and tangible assets" [13] and by the Methodical indications [6].

According to NAS "Intangible and tangible assets" [13, paragraph 6], the element shall be recognised as a tangible asset only when the terms and conditions stated below are simultaneously met:

- the element is identifiable and controllable by the entity;
- the element entry cost can be measured reliably;
- it is probable that the entity would derive future economic benefits from the use of the element;
- the element properties and features match the definition of intangible or tangible assets.

According to IAS 16 "Property, plant and equipment", the cost of an item of property, plant and equipment shall be recognised as an asset only if it is probable that future economic benefits associated with the element will generate inflows to the entity and if the cost of the item can be measured reliably [3, paragraph 7].

From the taxation standpoint, nowadays, the recognised tangible assets are those for which amortisation is calculated and which are expected to be used during more than one year, while their value is not less than MDL 6000 [7, Art. 26]. Hence, we can draw the conclusion that the value threshold stipulated by the tax legislation for the recognition of a fixed asset equals to MDL 6000. In the neighbouring country, i.e. Romania, this threshold is set by Government decision. At present, the minimum entry value of fixed assets is RON 2500 (the equivalent of MDL 10120) [12].

The peculiarities of recognising the items of property, plant and equipment differ depending on their entry manner, i.e. via procurement, manufacture within the entity, receipt in exchange, receipt as a contribution to the statutory capital, receipt free-of-charge, receipt in economic management, etc. Although procurement is the most frequent method of entry of property, plant and equipment, under the terms and conditions of PPP contracts, the entry of such elements is guided depending on the contract type.

As a rule, under work contracts, the recognised element is the work and its material output taken together (repair, construction, etc.) [6, paragraph 11].

The fiduciary administration contract provides for transferring the assets in economic management [6, paragraph 28]. The input cost of assets received in economic management shall be calculated pursuant to the primary receipt documents, having supplemented them, where appropriate, with the costs incurred for preparing the assets for their intended use [13, paragraph 14].

As for the topic of transferring the asset in economic management, Economists Nederita A. and Foalea L. expressed their opinion, according to which entities may receive assets in economic management on an ongoing indeterminate basis as per the decision issued by the corresponding public authority (founder), invoice and, where appropriate, the Minutes for acceptance-delivery of the assets concerned. Such assets shall be recorded in the entity Balance Sheet as assets, but the latter are not its property [9].

NAS "Intangible and tangible assets" recommends that following their initial recognition, the tangible assets shall be measured using the cost model or the revaluation model [13, paragraphs 17-18].

When using the cost model, the tangible assets shall be shown in the Balance Sheet at their carrying value, which equals to the input cost minus amortisation and cumulated losses from impairment.

Upon using the revaluation model, the tangible assets shall be recorded in the Balance Sheet at their fair value minus amortisation and cumulated losses from impairment. It is worth noting that as of 01.01.2020, the provisions related to the revaluation model for property, plant and equipment have

been included into the new version of NAS "Intangible and tangible assets" [13] and they are compliant with the requirements of IAS [3] and Directive 2013/34/EU [1].

The key term describing the revaluation model is the fair value of property, plant and equipment. NAS "Intangible and tangible assets" defines the fair value as the price that would be received while trading voluntarily an asset within an orderly transaction between interested, independent and well informed parties [13, paragraph 4].

IAS 16 defines the fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date [3, paragraph 5].

Following the revaluation of property, plant and equipment, differences (surplus or deficit) may emerge. Such differences shall be confirmed by primary documents. The way of revaluation outcome documentary preparation is not governed by the legislation. Nonetheless, as per the Accounting Law, the economic events shall be recorded on the basis of primary and summary documents [7, Art. 19].

Differences from revaluation shall be determined for each item of property, plant and equipment and mirrored in accounting depending on its effect (increase/decrease) on the item carrying value. According to IAS 16, the revaluation surplus shall be recognised in the composition of equity, except for the case when such surplus shall compensate the revaluation deficit recognised previously as current expenses. In such case, this amount shall be recognised as current proceeds [3, paragraph 39].

Both models are included in NAS "Intangible and tangible assets", but they are not supplemented with sufficient examples to be used by accountants as guidance to conduct subsequent measurement of property, plant and equipment.

**Inventories.** In compliance with the accounting regulations, **inventories** shall be recognised as current assets when the following terms and conditions are simultaneously met:

1. they are controlled by the entity, i.e. they are under the entity ownership;
2. there is probability of deriving future economic benefits by the entity from their use;
3. are intended for the use during the ordinary cycle of production/service rendering or will be sold within 12 months; and
4. their cost of entry can be determined reliably.

The general measurement basis for the entity inventories under PPP is governed by NAS "Inventories" [13] and IAS 2 "Inventories" [2].

Depending on the time of measurement, there are three measurement bases for inventories:

▪ **initial measurement** – shall be carried out on the date of initial recognition and involves determining their value to be recorded in accounting;

▪ **current measurement** – shall be carried out on the date of exit (consumption, sales, transmission to third parties, etc.) of inventories and involved determining their carrying value to be settled;

▪ **subsequent measurement** – shall be carried out on the date of reporting and involves determining their carrying value to be mirrored in the Balance Sheet.

In compliance with NAS "Inventories", the initially recognised inventories shall be measured at their cost of entry, which comprises all costs of purchase, all costs of processing (conversion) and all costs incurred in bringing the inventories to their present location and condition [13, paragraph 5].

According to NAS "Inventories", the cost of entry of inventories shall not include [13, paragraph 15]:

- losses of materials, costs incurred with the personnel and/or other production costs incurred over the allowed provisions/rules and shall be recorded as expenses from operating activity;
- costs of storage, except for the cases when such costs are required in the process of procurement and/or production, to be recognised as other expenses from operating activity or as indirect production costs, depending on inventories destination;
- administrative overheads, which are not included in the cost of inventories, as they are unrelated directly to their procurement;
- distribution costs, which do not affect the cost of inventories, as they are related to the sales of inventories rather than to their entry;
- other costs, which are not directly related to the entry of inventories and, therefore, shall not be included into their cost of entry.

In practice, issues may emerge when costs incurred in bringing the inventories to their present location and condition are included into their entry cost. The same applies to exchange and amount differences recorded upon the entry of inventories. As a rule, exchange differences occur in case of imports. According to NAS “Inventories” [13, paragraph 26], the measurement of those inventories shall be carried out in Moldovan Lei by recalculating the foreign currency at the NBM exchange rate on the date of drawing up the customs declaration or on another date of transferring, by the entity, of the ownership right over the purchased inventories, stated in the contract. These differences shall not affect the cost of entry of imported inventories, and, following their registration as inputs, the inventories shall be recognised as financial proceeds or expenses.

In compliance with NAS “Inventories” [13, paragraph 32] and IAS 2 [2, paragraph 23, 25], the inventory outflows shall be measured at their carrying value, which is calculated by applying one of the following current measurement bases:

1. specific identification;
2. FIFO (first in – first out);
3. weighted average cost;
4. LIFO (last in – first out)

LIFO method was included in NAS “Inventories” as of with 01.01.2020 and is convenient to apply upon continuous increase of prices of inventories sold [1, Art.12 (9)]. The inclusion of LIFO method in NAS “Inventories” seems to be reasonable as it is covered by Directive 2013/34/EU.

The current measurement base of inventories is established individually by each entity depending on the business peculiarities and is mirrored in its accounting policy.

Having considered the current measurement bases of inventories, it is not possible to conclude which one is the best relative to the others. It is necessary to take account of the fact that, as per the Tax Code, for taxation purposes, the current recordkeeping methods, including the costs of sales of goods and products, shall be applied by the taxpayers in compliance with the accounting legislation [1, Art.46 (3)].

On the date of reporting, the inventories shall be measured at the lower of cost and net realisable value (hereinafter referred to as the NRV) [13, paragraph 44]. The use of this measurement base stems from the prudence concept, which does not allow the assets to be overestimated and the liabilities to be underestimated.

When measuring the inventories as per the NRV, issues may emerge related to the documentary preparation, NRV calculation and accounting of afferent differences.

The regulatory acts in force do not cover the manner of documentary preparation of inventory measurement outcomes in compliance with the NRV. The local Economists Nederita A. and Popovici A. believe that such outcomes may be accounted on the basis of Minutes of diminishing the value of inventories, prepared by the entity stock-taking committee or by independent assessors. The form of the aforementioned document shall be developed individually by the entity and comprise the binding elements referred to in the Accounting Law [11] for the primary documents.

**Receivables.** The elements of accounting shall be recognised as receivables on the basis of documents, confirming their occurrence. Receivables are recognised when *there is a reasonable certainty that upon discharging the receivables or investments, the entity would derive future economic benefits and the value of receivables and financial investments can be measured reliably* [13, paragraph 5].

It is worth mentioning that the same recognition criteria of receivables are foreseen by IAS 39 "Financial instruments: recognition and measurement" [4, paragraph 14]; hence, there is a similarity between NAS and IAS from this standpoint.

Under the terms and conditions of PPP contracts are recognised:

- *Customers' receivables* represented by the *outstanding consideration of goods delivered, works carried out and serviced rendered to customers, goods, works and services representing the entity business;*
- *Debtors' receivables* represented by the disposal of non-current assets.

There are two measurement bases for receivables, namely the initial measurement and the subsequent measurement.

Upon the initial recognition, in conformity with the provisions of NAS "Accounting of receivables and investments", receivables shall be measured at nominal value, including the taxes and fees calculated as per the legislation in force [13, paragraph 12].

IAS 39 foresees the initial measurement of receivables at fair value – "the amount for which an asset could be exchanged between knowledgeable, willing parties in an arm's length transaction" [4, paragraph 43].

A particular case occurring upon the initial measurement of receivables is the present value, which is a current estimation of the value depending on future benefits emerging in the due course of business, i.e. the value available later. The present value of certain amounts to be received in the future is necessary as the amount received today values more than the same amount received in one year from now or on any other date in the future.

Hence, the present value is an issue to be explained dealing with the measurement of receivables that would be or not discharged in the future.

Subsequent measurement of receivables shall be carried out on the date of reporting and mirrored at their carrying value [13, paragraph 15].

NAS "**Receivables and financial investments**", as of 01 January 2020, was amended by having included certain restrictions regarding the measurement of securities on the date of reporting. Hence, as per the provisions of Directive 2013/34/EU [3], the entities that draw up abridged financial statements, would not be able to measure the securities admitted to trading on a regulated market at fair value, being required to measure them at the cost of entry or at the adjusted cost as per the standard provisions.

Likewise, a provision regarding the amount of long-term and short-term advances provided for non-tangible and tangible assets, inventories, which shall be disclosed separately in financial

statements under the non-current and current assets, regardless of the term of their settlement – this being a requirement of Directive 2013/34/EU.

**Liabilities.** Like receivables, liabilities shall be recognised in accounting on the basis of general recognition criteria, namely: *there is certainty that following the discharge (settlement) of a liability, there would be an outflow of resources bearing economic benefits; the liability value can be reliably measured* [13, paragraph 29].

The IASB general framework for drawing up and disclosing financial statements [5, Chapter 4, paragraph 4.46] stipulates that liabilities are recognised in accounting if the following terms and conditions are met:

- *the value can be measured with a high degree of accuracy;*
- *it is probable that the economic benefits related to the asset concerned would be diminished.*

Hence, a liability shall be recognised in the Balance Sheet when it is probable that there would be an outflow of financial resources bearing economic benefits, following the discharging of a current liability and the discharging value can be reliably measured.

According to the provisions of IAS 39 "Financial instruments: recognition and measurement", an entity will recognise a liability only when the latter becomes part of contractual provisions [4, paragraph 14].

The recognition of liabilities is correlated with their measurement. As in case of receivables, there are two measurement bases: initial measurement and subsequent measurement.

The liabilities are measured at their nominal value to be settled, including the taxes and fees covered by the legislation (VAT, excise taxes, other taxes and fees) [13, paragraph 31]. Hence, they shall be recorded in accounting, using the accrual recording concept, i.e. when they were recorded in accounting documents, being included in financial statements during the period they refer to, not when cash amounts are paid or other assets are transferred in exchange.

Both the recognition and measurement of liabilities shall be based on fundamental accounting principles: *accrual accounting, prudence, priority of content over the format.*

In the Republic of Moldova, the issues related to the recognition and measurement of liabilities can be tackled on the basis of accurate and due interpretation of provisions of regulatory acts.

**Proceeds.** Accounting of proceeds is conditioned by their source – sales of products and goods; rendering services; usage of entity interest-, royalty- and dividend-bearing assets by third parties.

As a rule, proceeds are recognised separately for each transaction. Under certain situations, proceeds may be recognised by the distinct components of a transaction (for instance, if the sales price of goods includes an identifiable amount for subsequent services, the same amount is recorded initially as anticipated proceeds and recognised as current proceeds over the period of rendering the maintenance services for the traded goods) [13, paragraph 6].

In case of concession, the type of PPP contract most frequently used in the RM, the public partner shall recognise proceeds from royalties received as:

- *one-time payment for the entire period of concession* by calculating the proceeds afferent to the concession contract – as a concurrent increase of receivables and of anticipated proceeds;
- *regular payments* by calculating the proceeds afferent to the concession contract to the extent the settlement date occurs – as a concurrent increase of receivables and proceeds.

The recognition of proceeds involves also their measurement. As per the NAS “Proceeds”, the latter shall be measured at fair value of the consideration (payment) received or receivable minus the value of any price discounts, bonuses and other trade rebates granted by the Vendor [13, paragraph 7].

According to the proposed amendments and addenda to NAS “**Proceeds**”, as of **01 January 2020**, an adjustment base was introduced for proceeds derived from services rendered, as well as provisions related to the proceeds afferent to the adjustments of long-terms and current investments value, having described the cases when such occur.

**Expenditures.** As in case of proceeds, expenditures are recognised on the basis of general recognition criteria, involving the fulfilment of two conditions: the first, a reduction of future economic benefits is expected by reducing the assets or increasing the liabilities; the second, a reliable measurement of the reduction is used. Hence, the recognition of expenditures shall take place concurrently with the increase of liabilities or decrease of assets [13, paragraph 6].

Their breakdown shall comprise both the expenses related to the current activities, such as the cost of sales, salaries, amortisation, etc. and the losses arising from the disposal of non-current assets, the losses incurred due to natural calamities, etc.

Expenses incurred during the reporting period, but referring to subsequent reporting periods and exceeding the materiality threshold outlined by accounting policies, shall be recognised as anticipated expenses. When the corresponding period occurs, the anticipated expenses shall be reported to current expenses, using the linear method or any other approach established by the entity.

As for the measurement of expenditures, NAS “Expenditures” [13, paragraph 14] covers the following matters:

- carrying value of outflow assets;
- actual cost of services rendered/works carried out;
- actual amounts of remuneration calculated for the personnel, social security and health insurance contributions;
- amount of amortisation calculated and impairment of non-current assets;
- provisions created;
- cost of services received, etc.

Proceeds and expenditures afferent to the same economic operations shall be disclosed in the Statement of Profit and Losses during the same reporting period (for instance, the carrying value of goods sold and their sales price are recognised during the same reporting period). If no proceeds were recorded during the reporting period, while expenses were incurred to be recognised in conformity with NAS “Expenditures”, such shall be disclosed in the Statement of Profit and Losses during the reporting period when they were incurred. If proceeds only were recorded during the reporting period to be recognised in conformity with NAS “Proceeds”, while no expenses were incurred, the former shall be disclosed in the Statement of Profit and Losses during the reporting period they were earned.

In case of a civil society contract, the proceeds/expenses recorded/incurred during the civil society activity shall be recognised and divided amongst the associates proportionally to their holding share [6, paragraph 35].

As for the proceeds and expenses afferent to the implementation of work contracts, they are recognised by the private partner when the contract outcome can be reliably measured based on the contract duration, which may fall within or exceed the limits of a given reporting period. When the contract is carried out over several reporting periods, the contractual proceeds and expenses are recognised

by applying the approach based on the contract execution phase. Pursuant to this approach, contractual proceeds and expenses are recognised for each phase of contract execution [6, paragraph 16].

## CONCLUSIONS

Following the comparative review of regulations governing the recognition and measurement bases of elements of accounting, a number of similarities has been tracked down (in terms of definitions, classification), as well as differences (in terms of requirements regarding the information to be disclosed in financial statements).

The NAS amendments entered into force on 1 January 2020, and they resulted from the provisions of IAS 16 and Directive 2013/34/EU.

The NAS failed to cover all matters related to the recognition and measurement of elements of accounting under the terms and conditions of PPP contracts, while the Methodical indications require amendments and adjustments to be in line with the new NAS enacted on 01 January 2020.

In order to properly use the amended provisions of NAS it would be necessary to identify the divergences between the NAS and IAS provisions related to the recognition, reclassification and measurement of elements of accounting.

As a result of conducting the comparative review of regulations governing the settlements with debtors at the national and international levels, similarities have been identified in terms of chapters of classification, as well as differences in terms of regulation, measurement bases, especially the subsequent measurement, and requirements regarding the information to be disclosed in financial statements.

It is worth mentioning that given the actual circumstances of economic recession, special attention shall be paid to the measurement of elements of accounting at their correct value and their disclosure in financial statements, regardless of the fact that such value would mean a decrease in the company goodwill.

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## THE IMPACT OF INFORMATION AND COMMUNICATION TECHNOLOGIES ON THE EFFECTIVENESS OF INTERNAL CONTROL SYSTEM IN BANKS

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**Abstract.** *Information and communication technologies are one of the most important factors in the efficient operation of the bank's internal control system. The development of new technologies and their inclusion in the information systems of banks, has predetermined the formation of cyber or information risks to which banks are exposed due to obsolete information systems. Therefore, the need to review and improve internal control systems in banks cannot be avoided. Based on the topic, the purpose of this study is to assess the role of information and communication technologies and their impact on the efficiency of the internal control system and its components (control environment, risk assessment, control activities, information and communication and monitoring activities) in banks. It also reflects the way in which information technology and electronic data processing influence banking processes. In this regard, the following research methods were used: analysis and synthesis, induction and deduction.*

**Key words:** *internal control, information and communication technologies, informational system, risk.*

**JEL CLASIFICACION: G32, M40**

### INTRODUCTION

Banks are increasingly relying on digital processes in order to achieve competitive advantages in terms of operational efficiency, reducing costs and human errors but also to increase the speed of transaction processing. Nowadays, banks give more attention for information systems development that also involve computer technology and tend to integrate the dispersed processes into a single harmonious system that generates complex information to the bank's governing bodies to achieve a greater performance of their functions, including the internal control function. The role of information systems on the efficiency of internal control is reflected by their ability to: identify deviations from the bank's objectives and related decisions of the bank's management on operational activity, make necessary adjustments to the management process in a timely manner, taking into account changes in both internal and external environment and as well as the exercise of systematic control over the activity of the bank subdivisions. The implementation of the mentioned tasks contributes both to the consolidation of the control efficiency and to its centralization, thus increasing the management level of the bank as a whole.

Along with the development of information and communication technologies (ICT), some new risks have arisen and the digitalisation of financial services could reduce banks' resistance to both cybercrime and cyber disruptions. According to the regulation of the National Bank of Moldova (NBM) on minimum requirements for information and communication systems of banks, ICT risk is considered a subcategory of operational risk that includes risks posed by compromising the integrity, distortion and unavailability of data and/or information systems as well as the lack of ability to cope

with new technologies and change them in a timely manner and at a reasonable cost. In order to achieve business objectives, the bank needs accurate, adequate, relevant, available and secure information technology (IT) which in turn will have an impact on the development of automated information systems. Therefore, it is indisputable that internal control cannot be effective if its organization, content and procedures are not improved together with the development of technological support for banking activities.

A comprehensive IT governance framework that addresses all aspects of IT and integrates them all into global IT standards is the COBIT (Control Objectives for Information and Related Technology) standard, developed by ISACA (International Association of Computer Systems Auditors). COBIT provides the basis for the creation of both general reliability rules and a mechanism for monitoring the efficiency of the use of information systems. According to the standard, information must comply with the criteria of availability, credibility, confidentiality, efficiency and integrity; however, if an activity involves the application of information resources but the information criteria do not match, it represents an information risk. Therefore, COBIT allows the use of best practices in information technology control, process maturity and an adequate level of reliability and control in the use of information technology. The standard covers the following areas of IT activity: (1) planning and organization; (2) acquisition and implementation; (3) supply and support; (4) monitoring and evaluation. It helps entities maintain a balance between achieving benefits and optimizing risk levels and resource use [6].

## **1. THE IMPACT OF ICT ON INTERNAL CONTROL ELEMENTS**

According to the document „Integrated Internal Control Framework” developed by the Treadway Commission Sponsorship Organizations Committee (COSO), internal control consists of five interdependent components where information and communication technologies have either a direct or an indirect impact on each component which consequently play a huge role for establishing an efficient internal control system, as follows:

1. Control environment represents the attitude towards internal control and control awareness established and maintained by management and employees of the entity. In the meanwhile, it influences the setting of the bank’s strategy and objectives and the way in which risks are identified, assessed and managed. The control environment can be considered a foundation for other components of internal control, as the environment determines the extent to which the components interact effectively and ensures their discipline and structure.

Information technologies are involved in all control environment factors, being used to allow the sharing and updating of information and monitoring the employees’ compliance with the code of conduct and policies, standards and procedures of the bank. Thus, the IT solutions used in this regard facilitate, among other things:

- employees’ access to the bank’s internal page (intranet) which could include information on the bank’s values, code of conduct and their importance;
- access to related information, thus being eliminated the necessity to keep paper copies;
- e-learning opportunities;
- notification by supervisors to staff in order to perform tasks;
- automatic reminder of the staff in order to perform the necessary actions;
- audit track of activities [2].

As the organizational structure provides the framework for planning, execution, control and monitoring of the bank's activity, it is necessary to mention the importance of the segregation of controls of as for subdivision responsible for information systems as well as for user subdivisions. Thus, the subdivision responsible for informatic systems is not authorized to carry out transactions and its functions has to be separated at least into three categories:

a) Programming:

- System analysis - analyzes the user's environment and requirements, thus, as specific changes as well as the acquisition of a new system or the design of a new information system could be suggested for implementation;

- System programming - the responsibility of this function involves the implementation, modification and troubleshooting of programs;

- Application programming - this function is responsible for writing, testing and troubleshooting application programs following the needs identified during the system analysis;

- Database administration - maintaining and restricting access to the database;

- Data preparation - can be prepared by user departments;

b) Operational - responsible for day-to-day operations using ICT equipment, supervising operations on virtual workstations and providing assistance;

c) Storage - the data library keeps the removable data and maintains the system and program documentation [7].

Therefore, the information system (which also includes the automation of the banking system) is the most important element of the control environment.

2. Risk assessment - an effective risk management system allows the identification, analysis of risks as well as the establishment of actions that need to be taken and could prevent the achievement of the bank's objectives. Therefore, the executive body should take the necessary measures to prevent risks and ensure they are handled properly to achieve the bank's objectives [4]. The main challenge of recent economic trends is to identify the balance between risks, costs and values to get more results from banks using as few resources as possible. In this context, financial risk management should be done automatically or in specific cases using special applications, thus, the automation of risk management processes would significantly increase the efficiency of this process. Changes to computerized information systems and operations may increase the risk of incorrect financial reporting.

The most common financial risks that affect the volume, profitability, value and structure of the bank assets and liabilities, where ICT plays an important role, are:

a) Interest rate risk - due to IT solutions, banks have the opportunity to simulate their activity using mathematical programming methods which allows the establishment of limits for the established parameters;

b) Credit risk - IT solutions represent an important resource in assessing the counterparties' creditworthiness, being used an internal rating system, however during the lending process is being used a scoring system for the borrower analysis;

c) Liquidity risk - information technologies allow real-time monitoring of structural fluctuations in assets and liabilities as well as the sensitivity of assets and liabilities to changes in interest rates and future capital requirements of banks;

d) Price risk - for the analysis of the risk of losses incurred due to changes in quotations for the bank's financial instruments, are required data on transactions and account balances, updated market rates as well as market indices. IT solutions allow the improvement of the systems used for analyzing

financial instruments (revaluation of securities portfolios at current market prices, performing calculations) as for monitoring compliance with existing requirements well as for reporting process;

e) Currency risk - in order to reduce the losses caused by exchange rate fluctuations, are used adequate information systems that allow the real-time display of the exchange rates direction and information related to the international foreign exchange market;

f) Market risk - IT solutions allow the analysis of the uncertainty on the financial markets' situation development through various methods, such as calculating Value-at-Risk, Monte Carlo, sensitivity analysis of the portfolio to changes in market parameters, etc.;

g) Investment risk - the risk associated with the bank's investment activities can be analyzed by simulating investment processes, using appropriate software [ 8, 9].

In the Republic of Moldova, banks also use various information programs and software both in order to reflect the results of the control and to identify the reasons for risk exposure of their activity.

3. Control activities - are the policies and procedures that contribute to ensuring compliance with management directives and the actions needed to be taken to address the risks to the entity's objectives. As banks use information systems in order to manage their activity, to report, to follow changes in legislation but also to avoid potential losses, it was necessary to introduce control procedures on the electronic information systems used to perform these functions. At the execution level, depending on the technical support involved, control activities can also be automated and manual [2]. Control procedures for information processing are performed to verify the accuracy, completeness and authorization of operations, and information systems should include both general and specific controls:

a) general control refers to all aspects of IT systems within banks designed to ensure the integrity, accuracy and credibility of data and IT applications. Thus, in the event of weaknesses in the overall control, it may be unnecessary to review or evaluate the control of applications. There are many levels of general control, starting with the bank's management, which must ensure that IT is well managed and is responsible for setting the policy for the use of information technology within the bank. At the same time, the general control refers to the development standards and updating of new programs and systems within the bank, control of access to programs and data, control of computerized operations, IT security procedures, rules for installing applications on workstations, back up and restoring information in the event of unforeseen events, etc.);

b) the control activities (specific) of the computerized applications are embedded in the IT application, involve the processing of individual operations and depend on the way the given application was programmed. Thus, applications automatically control data entry and ensure that supported applications are available and interface errors are quickly detected [1].

Automated systems used in information processing could generate more risks due to transaction processing, undetected errors, registration of infrequent operations, failure of technical or software equipment components, etc. Thus, it is also necessary to involve manual control by verifying the data entered into the computer with the primary documents or other information to ensure that the scheduled aspects of the financial reporting system and control activities have worked efficiently [7]. It is becoming obvious that the effectiveness of internal control depends largely on both the effectiveness of scheduled control activities that generate reports and manual monitoring activities. Otherwise, banks could generate data and software losses due to deficiencies in electronic equipment, systems and security as well as data recovery procedures.

4. Information and communication - these elements focus on the nature and quality of the information needed to implement an effective control. The information must be communicated from top to bottom, organized in a form and in a timely manner that will allow all responsibilities to be fulfilled.

Information plays a critical role in a bank, as it is constantly growing, thus creating conditions for the accumulation of experience, contributing to the development and adoption of effective decisions by management. Banks can have enormous opportunities to accumulate large amounts of information for business, at the same time, the information needs of banks continue to grow steadily, but most often, they fail to have all the necessary information. Therefore, the sooner this problem will be solved, the sooner conditions will be created for the formation of a stable and reliable banking system in the Republic of Moldova.

From the internal control point of view, the information quality plays a key role in the management's ability to make the right decisions, therefore, information must be relevant, reliable, current, timely, complete, accessible, comparable and should be sufficiently prepared for use. However, the information requirements fulfillment can only be achieved by owning developed information systems. Moreover, modern information technologies contribute to the development of information processing technology without using of the paper documents, and the number of types of electronic documents that have the same legal status as paper ones is constantly increasing. Thus, it becomes possible to implement the concept of complete management of electronic documents by facilitating the transfer of data almost instantaneously, the uniqueness of storage, improved security as well as a sharp decrease in the intensity of the workforce of document processing.

Information and communication technologies have a considerable effect on improving the efficiency of the information process and influence both external and internal information systems. External information systems based on information technologies have emerged because of the fast information technology and telecommunications development, subsequently having a huge impact on the development of the entire world banking activity. The most important international information systems known are the International Banking Telecommunications Company (SWIFT), the Reuters system, the Internet. Banks need to make greater use of the information systems capabilities mentioned above in their activities to expand their qualitative boundaries and integrate international financial markets.

The integration of the information system (the ability of all its components to operate on a single database in the bank) is an important aspect in streamlining internal control, so the information of any subsystem is available in real time for all other subsystems. The automation system integrated in the bank needs to have a specific architectural structure, which implies special requirements for applications, technical equipment and communication facilities. Thus, the architecture of information systems and the acquisition of new technologies are important aspects of the bank's strategy, and the selection of the type of technologies used can be essential to objectives' achievement. In order to provide services to customers, the banking activity requires the organization to develop an operational and convenient system of services as in any branch of the bank as well by creating the possibility of remote self-service, thus, such opportunities are accessible only by using ICT solutions and devices (online banking, ATMs, terminals etc.).

In order to combine the information needed for risk management, banks have improved their technology architecture to allow the use of large amounts of data. Web-based information strategies allow real-time data capture, maintenance, and distribution between units and functions, thus,

allowing a better control of multiple data sources. These strategies provided the opportunity to minimize manual processing and automate data analysis and reporting. The use of eXtensible Business Reporting Language (XBRL), eXtensible Markup Language (XML) and web services standards facilitates the aggregation and transfer of data between different intrabank and interbank systems as well as between applications and consequently automates the financial reporting process that leads to its efficiency improvement. Moreover, the XBRL standard allows management and auditors to verify quickly the information at any level of consolidation, either in an operating unit or at the entity level, which also facilitates the rapid identification of the actions required by management. The cost of compliance is also reduced by providing a more efficient platform for communication with regulators, creditors and other parties [2].

As well, banks have highly complex developed information systems that allow real-time monitoring of operations, allowing employees and management immediate access to financial and operational information for more effective control over the bank's business. For the purpose of efficient risk management, entities record and use both historical and current data, but IT systems allow tracking of compliance of effective indicators with expected objectives, plans and expectations. Therefore, these data allow management to assess in real time the existing risks of a particular process, function or unit and to monitor performance; therefore, this information becomes fundamental for effective risk management. Moreover, the growing reliance on information systems at strategic and operational level generates new risks, such as risks of information security breaches or Internet crime, which should be taken into account during the risk management process.

Communication is essential for creating an appropriate internal environment and supporting the other internal control components. In addition to information flows from top to bottom, communication channels should be adjusted to facilitate the communication of information within bank structures or processes. Communication failures can occur when employees are not encouraged to provide important information to other subdivisions or to management or simply do not have the ability to do so. In order to inform management, it is necessary to have open channels for the transmission of information and the availability of management to perceive such information. The channels frequently used for the distribution of information both internally and externally such as the Internet, web pages, e-mails, instant messages, online discussions, web broadcasts, cloud technologies have an enormous impact on the efficiency of continuous communication. The internal communication often used is the intranet site, which can incorporate information on risk management, discussion forum, policies and procedures, contact details of bank employees, etc., with easy and constant access for all staff of the bank. Withal, technology solutions have the possibility of creating separate communication channels as a safety mechanism in case the usual channels do not work.

5. Monitoring - the purpose of this element is to determine whether the internal control is properly designed, correctly executed and evaluates its efficiency. Internal control is properly designed and performed if all five internal control components are present and operate as intended. Many banks that have suffered losses due to internal control problems have not effectively monitored their internal control systems. Often the systems did not have the necessary ongoing monitoring processes in place, and the carried out separate assessments were either inappropriate or not used properly by management [4]. The impact of ICT on continuous monitoring activities, regular monitoring and the internal control evaluation process within banks is reflected in the methodologies and tools used. Methodologies and techniques that could use ICT solutions and equipment to facilitate the evaluation process include the elaboration of the data flow diagram, risk and control matrices,

questionnaires, risk assessment and control workshops, etc. As most financial reports are now generated online and in real time, along with the new electronic technologies that continue to improve, new major challenges have arisen for internal auditors, especially in the area of the efficiency of the internal control system. Thus, auditors need to understand as accounting and internal control as well as information systems to have adequate IT skills to prepare financial statements and assess the correctness of the computer applications processing, which will allow the efficient performance of the audit [5]. Moreover, ICT may be involved in the evaluation of data and transactions based on pre-established criteria and may report the occurrence of inappropriate or unusual elements, which could affect the bank's ability to either implement its strategies or set and realize its objectives. Therefore, the automation and incorporation of the monitoring process into the banking business reflects an important contribution in streamlining internal control.

## **2. CHALLENGES RELATED TO THE IMPLEMENTATION OF INFORMATION AND COMMUNICATION TECHNOLOGIES**

Banks implement the internal control system to minimize potential risks, however, the effectiveness and value of control can be assessed by the costs and the extent to which it reduces the expected risks [6]. In addition to the benefits of information and communication technologies, which relate to reducing the cost of the transaction, improving the efficiency of internal control, the quality of information, the operational process and customer service, there are certain shortcomings that banks have to deal with. Maintenance costs and the need to operate in accordance with certain security measures, including maintaining data security, but also the fact that the person involved in the processing of data by using information technology cannot be tracked in case of errors, represent some of the ICT important deficiencies. Thus, the costs of the financial investments needed to ensure adequate infrastructure should be offset by the benefits provided by information technology products. By using computer systems equipped with adequate security mechanisms, as the unauthorized access to data as well as the recording of unauthorized transactions could be avoided. Although the automated processes facilitate a rapid data processing, there is a risk that in case of deficiencies, the error detection or program modification could take a long time [5].

Other challenges of ICT implementation and consequently, of the internal control system in banks are:

- Information systems and infrastructure of insufficiently secured communication networks;
- Constant and rapid changes in technologies;
- The number of technologies faces an imposing growth;
- Customers' preferences and needs are always changing;
- The number of employees is insufficient or they are not properly qualified;
- Management must provide up-to-date technological support;
- Information technologies should correspond to the specifics of the bank's activity;
- The need to educate customers on new information technologies [3].

The advent of new technologies that are changing the way customers interact with money through the penetration of smart devices and the high speed of the Internet as well as the competition of banking services have had a huge impact on the digital transformation of banks. Therefore, with the creation of opportunities for the digitalization of financial services, banks' exposure to cybercrime (data theft, compromised accounts, destroyed files, etc.) and disruption of information systems could be affected.



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## DEVELOPMENT OF SUPPORT INFRASTRUCTURE FOR INNOVATION ACTIVITY IN THE REPUBLIC OF MOLDOVA

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**Abstract.** *Innovation is an already well-established concept in the context of economic development, improving competitiveness and catalyzing the potential of micro, small and medium sized enterprises. The purpose of the paper is to analyze the public policy framework on the development of support infrastructure for innovation activity in the Republic of Moldova, and to elucidate the main strategic documents that include respective provisions and their impact on creating a favorable environment for companies focused on applying innovations in offered processes and / or products. The research methodology is based on the analysis of state policies on the development of innovation support infrastructure, as a result of which it was determined that although, in the last ten years, the priority of innovation is mentioned in more and more strategic documents, the share of gross domestic product expenditure allocated by the government of the Republic of Moldova for science and innovation is in significant decline. Innovation infrastructure (innovation incubators, clusters, science and technology parks), although is constantly evolving, still has significant shortcomings in terms of the interconnection between enterprises and research institutions as a result of poor capitalization and limited application by companies of scientific research / innovations for various reasons (lack of knowledge, of financial resources, of qualified staff, etc.).*

**Key words:** support infrastructure, innovations, public policies.

**JEL CLASSIFICATION: O30, O38**

### INTRODUCTION

Innovation activity continues to be the accelerator of economies development at the global level. Today, the world's economies tend to become integrated and interdependent, and companies are to take advantage of global business opportunities by marketing new products and processes faster than competitors - a key criterion in economic growth, also recognized in the "Innovation Agenda" from Lisbon. [4] According to the Code on Science and Innovation of the Republic of Moldova, the infrastructure of research and innovation represents the totality of organizations that contribute to the development of scientific and innovation activity: the Academy of Sciences, other organizations in the fields of research and innovation, financial institutions, funds and agencies supporting activities in the field, business incubators, innovation parks (scientific, technical-scientific and technological), enterprises and other specialized organizations.[1]

According to Eugen Hrişcev's view, innovations represent "changes occurred in the production of goods and services, in socio-economic relations, science, culture, education and other spheres of human activity, conditioned by the use of intellectual resources and oriented towards modernizing the production process, improving its results and (or) reducing costs" [8, p.12].

The OECD defines innovation as "the end result of innovation activity, represented by a set of scientific, technological, organizational, financial and commercial actions, which involve investment in new knowledge, designed to provide for the realization of a new or improved product". [1]

The role of innovations has been widely addressed at national and international level by various researchers (Shumpeter J., Hansen A., Francis D., Bessant. J. Şendrea M., Stratan A., etc.); international organizations (OECD, World Bank, European Commission, etc.) and authorities. The actuality of the researched topic also lies in the spectacular results that companies in the most diverse industries have in creating innovative and competitive products worldwide. The need to be competitive imposes new quality standards, new visions, technologies and new approaches in interacting with customers. In this complex process, the role of the authorities is to create the framework of public policies aimed at promoting the development of innovations, but more importantly to create tools and catalyze the connection between the actors involved in the innovation process. Thus, we propose the following objectives: (1) identification and analysis of public policy documents that provide for the development of innovation activity; (2) determining the share of expenditure on science and innovation in total budget expenditure for the last 10 years (2009-2019); (3) determining the share of expenditure on science and innovation in gross domestic product for the last 10 years (2009-2019); (4) description of the evolution of the support infrastructure for the innovation activity in the Republic of Moldova; (5) elucidation of the strengths and weaknesses of the innovation system in the Republic of Moldova, based on the "Global Innovation Index" international ranking.

## **MATERIALS AND METHODS**

The article aims to analyze the public policy framework on the development of support infrastructure for innovation activity in the Republic of Moldova, elucidate the main strategic documents that include respective provisions and their impact on creating a favorable environment for companies focused on applying innovations in offered processes and / or products. The research methodology is based on the analysis of state policies on the development of innovation support infrastructure.

## **RESULTS AND DISCUSSIONS**

The widely applied innovation activity in various fields is essential to increase the competitiveness of the economy, create job places, improve education, reduce the anthropogenic impact on the environment and improve the quality of life. Investing in research, technological development and innovation (RTDI) has a positive impact on industry development and creation of a favorable environment for companies to be aware of the importance of this process. The major impediment, noticed especially by small and medium enterprises, which stays at the basis for the implementation of innovations is the high costs for conducting studies, finding optimal solutions and applying them in the company's processes. Thus, in order to correct market failures, ensure the coordination of activities and encourage innovation, governments implement various policies to support the RTDI sector. The support of the innovation activity by the authorities of the Republic of Moldova is carried out through the following legislative documents:

- Innovation strategy of the Republic of Moldova for the period 2013-2020 "Innovations for competitiveness" (GD no. 952 of 27.11.2013).
- Law on science and technology parks and innovation incubators (no. 226 of 01.11.2018). Official Gazette no. 448-460 / 725 of 07.12.2018.
- Code on Science and Innovation of the Republic of Moldova (no. 259-XV of 15.07.2004). Official Gazette of the Republic of Moldova no. 58-66 / 131 of 23.02.2018.

- Government Decision of the Republic of Moldova no. 614 of 20.08.2013 on "The concept of cluster development of the industrial sector of the Republic of Moldova".

Since 1994, together with the approval of the *Code on Science and Innovation*, the main actor in the field of science becomes the Academy of Sciences of Moldova, which develops concepts, projects and state programs, provides advice to public authorities on strategic directions of state policy in the field of economic, social and humanitarian spheres. The Academy of Sciences of Moldova, through agencies, science parks, innovation incubators and business incubators, achieves the relationship between the scientific, academic and entrepreneurial environment, so that innovations are applied in practice and entrepreneurship is in a process of continuous development. In this way, a mutual development takes place: the scientific-academic environment, through research and elaborations, innovates entrepreneurship, which, in turn, demands innovations, in the pursuit of competitiveness and prosperity.

In order to create the innovation infrastructure, in 2007, the Law on Science and Technology Parks and Innovation Incubators was developed and adopted, which provides fiscal, customs and tariff facilities for their residents. Also in 2007 the "Academica" Science and Technology Park and the "Innovator" Innovation Incubator were inaugurated. Thus, from 2007 to 2015, 8 innovation incubators were established in Chisinau, Balti and ATU Gagauzia. (Table 1)

They offer its residents - innovative companies, a package of services, such as: spaces, constructions and endowments, supplemented with a whole series of material, informational, personnel, financial, expertise and consultancy services.

**Table 1.** List of innovative business incubators in the Republic of Moldova

<b>Innovative business incubators</b>		
<i>Business incubator</i>	<i>Location</i>	<i>Year of establishment</i>
<i>Inovatorul</i>	Chisinau	2007
<i>Politehnica</i>	Chisinau	2011
<i>Innocenter</i>	Găgăuzia	2012
<i>Inventica USM</i>	Chisinau	2012
<i>Nord</i>	Bălți	2012
<i>Antreprenorul inovativ</i>	Bălți	2013
<i>Media Garaj</i>	Chisinau	2014
<i>IT4BA</i>	Chisinau	2015

*Source: Developed by author*

**The innovation strategy of the Republic of Moldova** for the period 2013-2020, "Innovations for competitiveness" sets three objectives: [2]

1. technological development of enterprises, including small and medium enterprises;
2. development of the support infrastructure for the innovative activity;
3. ensuring the conditions for building a knowledge-based economy.

Also, the Strategy provides the necessary framework for the implementation of the results of national scientific research, being in accordance with the Research and Development Strategy of the Republic of Moldova developed by the Academy of Sciences of Moldova. Thus, the purpose of the Strategy is to ensure a consistent framework of horizontal policies that will contribute to increasing the country's international competitiveness and building a knowledge-based economy, by developing human

capital, strengthening the capacities of Moldovan companies to absorb, generate and disseminate innovations and by their closer interconnection with university and research centers.

The general objectives identified above, are detailed below in specific objectives, concrete measures and actions that will be carried out in the process of implementing the Strategy. (Table 2)

**Table 2.** Presentation of specific objectives and actions aimed at achieving the goal of the strategy of the Republic of Moldova "Innovations for competitiveness"

<i>Specific objective</i>	<i>Actions</i>
<b><i>Facilitating the networking and technological integration of Moldovan and foreign companies</i></b>	<ol style="list-style-type: none"> <li>1) providing support for the networking of Moldovan SMEs with “business angels” (“investment angels”, investors who invest in new, risky but promising businesses) and for stimulating the association of innovative SMEs with European and international business associations;</li> <li>2) facilitating the process of creating an Innovation Investors Club of the Republic of Moldova, which would bring together businessmen with the capacity to provide capital, consulting, positive practices and models for innovation business;</li> <li>3) organization of business camps in which local and foreign business leaders will share their experience of innovative entrepreneurship to young companies;</li> <li>4) conducting strategic negotiations in order to attract medium and large international companies in the Republic of Moldova, with capacities to generate new technological chains and create innovative clusters;</li> <li>5) strengthening the capacities of the Organization for Attracting Investments and Export Promotion, of the Chamber of Commerce and Industry and of other support agencies for the networking of local companies with foreign ones.</li> </ol>
<b><i>Providing state support for innovative companies</i></b>	<ol style="list-style-type: none"> <li>1) development and inclusion of the “Innovation Management” module in the “Efficient business management” state program;</li> <li>2) development and implementation of the state program "Exchange of experience with European companies in advanced innovation management" for companies that have already demonstrated innovative skills;</li> <li>3) inclusion of the innovation components within the state support programs of SMEs (the Program for attracting remittances in the economy - PARE1 + 1, the National Program for economic empowerment of young people, the Credit Guarantee Special Fund);</li> <li>4) inclusion of innovation components in the Regulation of the Energy Efficiency Fund to encourage innovations in the field of energy conservation and efficiency;</li> <li>5) extension of the formula for financing projects in the field of innovation in formula 1 + 1 for the procurement of new technologies and for technology transfer projects;</li> <li>6) development and implementation of the state program "Innovative Moldova" to support new innovation export-oriented businesses (start-ups);</li> <li>7) development and implementation of the state program “Innovative Voucher for SMEs” for mini-grants intended for innovative SMEs for marketing and organizational innovations, improvement of electronic pages, design and packaging improvements in industrial products;</li> <li>8) development and implementation of the state program for pre-competitive financing, support for testing industrial models and prototypes;</li> <li>9) development of the national mark “Green Economy” for products and processes and of the regulation of granting and use.</li> </ol>

Source: Developed by author based on. [2]

Another strategic document developed by the Ministry of Economy, which supports the development efforts of the industrial sector and implicitly the application of innovations by the business environment, is ***the Concept of cluster development of the industrial sector of the Republic of Moldova***. [3] The purpose of the concept is to determine the needs and possibilities of implementation and development of a mechanism for associating economic agents in "clusters" in order to contribute to the efficient and competitive development of industries. The state intervention proposed by the conception is related to the cluster development of the industrial branches with a significant growth potential, in which the necessary premises for the creation of the clusters were formed. The development of clusters aims to solve the problem of declining industrial activity, due to the low competitiveness of manufacturing enterprises in the Republic of Moldova. This concept represents the first complex document on the creation and development of clusters in the industrial sector and is based on best practices from Europe, China and other countries. The concept aims to obtain the following potential effects on research and innovation: increasing the demand for research / development services from enterprises, increasing the level of qualification of researchers, promoting technology transfer, developing research centers in the field, ensuring access of scientific institutions to new sources of financing, etc.

There are four clusters in the Republic of Moldova at the moment. These are the technical-scientific and training cluster "Elchim-Moldova", based on JSC "TOPAZ". The members of the cluster are 2 representatives of the business environment, 4 universities and 4 research, development and innovation institutions. The mission of the cluster is to concentrate scientific, intellectual and material resources in order to solve the problems related to the creation of innovative equipment and technologies for electrophysical and electrochemical methods of materials processing. The second is the innovative-educational cluster "InnoCenter", Comrat. The mission of the cluster is to create an object with an innovative infrastructure, which will increase the competitiveness of the region through the development of high-tech SMEs, marketing and transfer of high technologies.

In September 2018, the Organization for Small and Medium Enterprises Sector Development (ODIMM), through the Technical Assistance and Information Exchange Instrument of the European Union (TAIEX), generated the creation of two new clusters over a year. Soroca Textile Cluster SORINTEX, which brings together a number of 38 founding members and the Innovative Cluster Cahul. The generation of clusters was developed according to the model of clusters in Romania. The Romanian Cluster Association has provided methodological support in the process of generating Moldovan clusters. The association models applied by the clusters from Cahul and Soroca have the potential to replicate in other industries and will serve as an example for new initiatives coming from the territory.

Annually, financial resources for the development of the RTDI sector are provided from the state budget. The analysis performed on the evolution of expenditures for science and innovations in the last 10 years, shows that they have been in a continuous increase, from 378260.8 thousand lei in 2009, to 498000.0 thous. lei in 2019, which is welcomed. However, if we compare the share of RDI expenditures to total expenditures from the state budget, one can note that there is a decrease, from 2.88% in 2009 to 0.97% in 2019. Another relevant indicator for the analysis in the field innovation, used worldwide is the share of spending on science and innovation as a share of gross domestic product (GDP). The Republic of Moldova is well below the average of the European Union countries, where the share of GDP expenditures is on average 2.5%, registering a share of 0.62% in 2009, with a slight increase in the coming years, up to 0.40% in 2012. Subsequently, the share of expenditure on science and innovation decreased to 0.24% of GDP in 2019. (Table 3)

**Table 3.** The share of science and innovation expenditures in GDP and the state budget, thousands lei

Year	State budget		Gross domestic product	Expenditure on science and innovation	Share of science and innovation expenditure in GDP (%)	Share of expenditure on science and innovation in the state budget (%)
	Revenue	Expenditure				
2009	13099881,3	17748362,0	60429803	378260,8	0,62	2,88
2010	15318344,9	19454519,2	71885474	339093,9	0,47	2,21
2011	19087181,7	20354074,1	82348703	328156,5	0,40	1,61
2012	21367269,1	22164269,1	88227753	360354,0	0,40	1,62
2013	22507826,7	24394796,6	100510471	349922,5	0,35	1,43
2014	27570005,1	30010942,8	112049578	388261,1	0,35	1,58
2015	29152350,6	32724705,7	122562742	441970,9	0,36	1,35
2016	31378944,8	35561744,8	160814564	466900,0	0,35	1,31
2017	32839162,2	36994768,4	178880890	453900,0	0,25	1,23
2018	36618500,0	41332400,0	192508553	484500,0	0,25	1,17
2019	44136645,0	51551945,0	210351082	498000,0	0,24	0,97

Source: Developed by author based on: Statistical Yearbook of the Republic of Moldova, Budget Law 2009-2019, Statistical Data Bank. <https://statistica.gov.md/pageview.php?l=ro&idc=407&nod=1&>

By comparison, countries that opt en masse for the application of innovation in all areas of the economy and whose governments that are oriented towards the creation and continuous improvement of the RDI sector, end up investing about 3% of GDP per year for innovation. The world leader in innovation is Japan, which has had an annual share of research and innovation spending of more than 3% of GDP since 2006. Another country oriented towards the wide application of innovations is the United States of America, which in the period between 2006 and 2017 records annual expenditures of about 2.5% of GDP for this sector.

The European Union 2020 strategy developed in 2010 includes in its key priorities reaching the share of 3% of GDP of expenditure on research and development by 2020. Analyzing the period between 2006-2017, there is observed an increase in the share of expenditure on RDI from GDP, from 1.76% in 2006, to 2.06% in 2017. [7]

**The Global Innovation Index** (GII) is a ranking of global economies based on innovation capabilities, which has been published annually since 2007 and is developed by the World Intellectual Property Organization, American Cornell University and the Insead French management school. The ranking is based on about 80 indicators, including: human capital and research, infrastructure, loans, investments, interconnections, innovation, results of creative activity, etc., being grouped in inputs and outputs of innovations. The ranking analyzes the indicators of 129 countries and their annual evolution. The Republic of Moldova ranked 58th out of 129 in 2019, being down compared to the last two years. At the same time, it should be mentioned that the innovation outputs register much better results compared to the inputs in the period 2017-2019. (Table 4)

**Table 4.** Evolution of the Republic of Moldova in the "Global Innovation Index" ranking, 2017 – 2019

<b>Year</b>	<b>Global Innovation Index</b>	<b>Innovation inputs</b>	<b>Innovation outputs</b>
<b>2019</b>	58	81	45
<b>2018</b>	48	79	37
<b>2017</b>	54	73	32

*Source: Developed by author on the basis of the Global Innovation Index Report [6]*

According to the analysis performed in the "Global Innovation Index" ranking, the strengths of the Republic of Moldova in the field of innovation are:

➤ GII strengths for the Republic of Moldova are found in five of the seven GII pillars, and mostly on the innovation output side of the GII.

➤ Four of these relative strengths are in Knowledge & technology outputs (44), where the Republic of Moldova shows strengths in sub-pillar Knowledge creation (28) as well as in three indicators: Utility models by origin (4), Labor productivity growth (13), and ICT services exports (18).

➤ In Creative outputs (49), strengths are found in sub-pillar Intangible assets (26) as well as in three indicators: Trademarks by origin (7), Industrial designs by origin (11), and Mobile app creation (20).

➤ In Institutions (82), the Republic of Moldova's only strength is indicator Ease of starting a business (12).

➤ In Human capital & research (64), relative strengths for the country are indicators Expenditure on education (11) and Government funding per pupil (7).

➤ In Business sophistication (93), indicator ICT services imports (28) is a GII strength for this country.

In contrast, the weaknesses of the research and innovation sector in our country are the following:

➤ The Republic of Moldova's weaknesses in the GII are found in five of the seven GII pillars, and mostly on the innovation input side of the GII.

➤ In Human capital & research (64), GII weaknesses are indicators Global R&D companies (43) and Quality of universities (78).

➤ In Infrastructure (88), relative weaknesses are sub-pillars General infrastructure (115) and Ecological sustainability (116) and indicators Logistics performance (106), GDP per unit of energy use (112), and ISO 14001 environmental certificates (111).

➤ In Market sophistication (60), GII weaknesses are sub-pillar Trade, competition, & market scale (108) and indicator Domestic market scale (121).

➤ In Business sophistication (93), the Republic of Moldova has weaknesses in sub-pillar Innovation linkages (120) as well as in three indicators: University-industry research collaboration (109), State of cluster development (124), and Research talent (70).

➤ On the innovation output side, only one weakness is found in indicator National feature films (99).

## CONCLUSIONS

The innovation system in the Republic of Moldova has not yet managed to fully integrate into the processes of globalization of innovations. Currently, the support infrastructure for innovation activity in the Republic of Moldova is represented by: innovation incubators, science and technology parks and clusters. The share of expenditure on science and innovation in 2019 of total budget expenditure is only 0.97% and 0.24% of gross domestic product. These figures are well below the average of European Union countries, whose share of expenditures in GDP is approx. 2.5%. At the same time, it should be mentioned that the annual budget allocated for innovation activity in the Republic of Moldova has been in a continuous decrease in the last 10 years. The share of expenditures on science and innovation in GDP has decreased from 2.88% in 2009 to 0.24% in 2019. Paradoxically, the priority of developing the business environment through innovation in the last 10 years is included in more and more strategic documents as important and necessary, but expenditure on innovation is steadily declining. However, the modest financing capacities of micro, small and medium sized enterprises do not allow them to apply this instrument to diversify processes and products, which is also reflected in the "Global Innovation Index" ranking for 2019, where the indicator Business sophistication is 93 out of 129. The Republic of Moldova has weaknesses in sub-pillar Innovation linkages (120) as well as in three indicators: University-industry research collaboration (109), State of cluster development (124), and Research talent (70).

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## ECONOMETRIC ASSESMENT OF THE EFFECTIVENESS OF MONETARY POLICY RATE ON PRICE STABILITY

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**Abstract.** *The purpose of this research is to investigate theoretically and empirically the effectiveness of the monetary policy rate in the mechanism of transmitting monetary impulses to the real economy. The decision-making factor associated with the level of the monetary policy rate and the appropriate time of application of this instrument is the basis for an optimal monetary policy from the perspective of ensuring and maintaining price stability. The methodological and empirical aspect is based on the estimation of an error correction model (VECM) by applying the Johansen cointegration test in order to determining the presence of cointegration relationship. The model and the variables included in the model, such as economic growth, inflation and monetary policy rate were associated with the Republic of Moldova. The results of the research highlight the validity of the generated model, and the results of the Johansen cointegration test indicate the presence of long-term cointegrated relationships between variables. Thus suggesting that the NBM base rate is the significant monetary policy instrument applied by the National Bank of Moldova with repercussions on the evolution of the inflationary process, highlighting the persistence of the interest rate channel in reaching the inflation target.*

**Key words:** central bank, inflation, monetary policy rate, VECM model.

**JEL CLASSIFICATION :** C52 ; E31 ; E43 ; E52

### INTRODUCTION

*The importance of the researched topic* resides in investigating of the effectiveness of monetary policy current approach associated with the inflation-targeting framework, which uses the monetary policy rate as the main tool for managing, controlling and stabilizing inflation and creating an environment for sustainable economic growth. The recognition that the monetary policy results in keeping the inflationary process under control depend on the appropriateness of the monetary policy rate applying, taking as a benchmark the interest rate channel priority specific to the inflation-targeting framework in the monetary policy decision-making transmission mechanism, suggests the performing of background analysis with empirical evidence associated with the situation from the Republic of Moldova. This in turn gives the study topicality and the importance of the researched subject.

*The main purpose of the study* is to identify the relationship between the main instrument of monetary policy – the base rate and the fundamental objective of the National Bank of Moldova related to ensuring and maintaining the price stability, as well as finalizing the effectiveness of this rate in controlling and managing inflation, along with ensuring economic growth. In order to achieve the proposed goal, the following *hypotheses* were formulated, which we set out to demonstrate and confirm during this research:

1. In the Republic of Moldova, there is a cointegration relationship between the monetary policy rate, economic growth and inflation, which can be quantified by performing the Johansen test.

2. The long-term causal relationship between inflation, economic growth, and the monetary policy rate is elastic and can be identified by estimating the VECM econometric model.
3. In an economy with a developing financial market, the interest rate channel remains the important one in transmitting monetary policy impulses.

## MATERIALS AND METHODS

*The bibliographic sources analysis.* The theoretical and practical aspects related to the monetary policy instruments and actions, the transmission mechanism of monetary policy decision, the relationship between the short-term monetary policy rate and inflation, as well as the methodology for identifying the long-term relationships between variables have been researched mainly in the studies of economists and scientists, such as Bernanke, Johansen, Mishkin, Taylor, Swank. The studies and researches of the above-mentioned authors present a pronounced theoretical and practical value and have significantly contributed to the systematization of the concepts and findings formulated by the author.

*The used research methods* focus on both theoretical and practical procedures with reference to empirical and econometric estimates. The theoretical ones are reduced to the deductive, comparative and analysis methods. From the perspective of the research character, the research method is mainly applied, interdisciplinary, descriptive and causal.

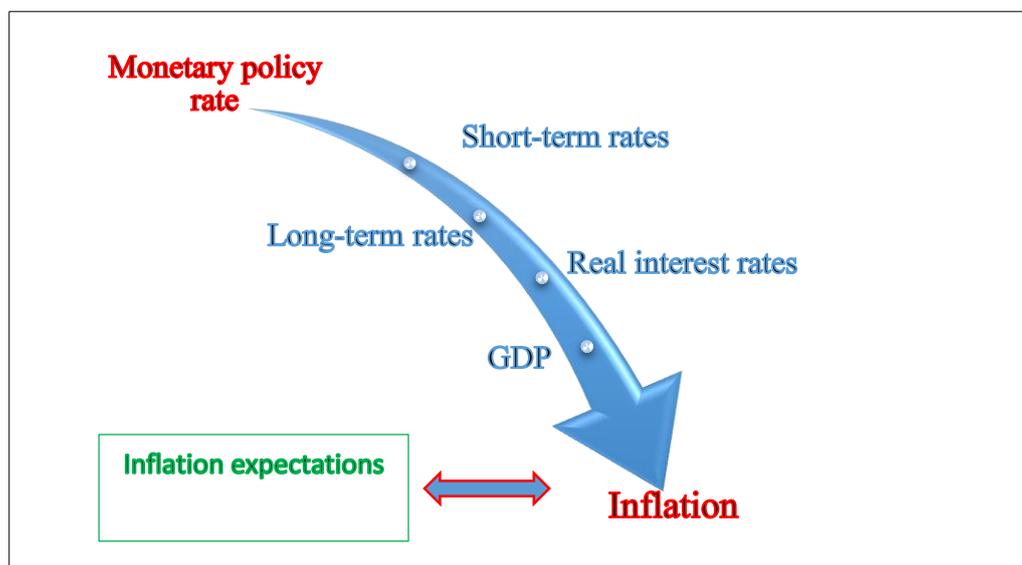
## RESULTS AND DISCUSSIONS

The review of the monetary policy literature highlights the importance and benefits of choosing the monetary policy rate as the basic instrument of monetary policy in order to ensure price stability and sustaining the durable economic growth. Thus, Taylor [8, p.2] considers that the problem of monetary policy is to find a good procedure to use in order to establish the effective instrument of monetary policy, able to ensure the achievement of the proposed objective (price stability) - usually the short-term interest rate. At the same time, Taylor [7] argues that there is strong empirical evidence associated with the effects of interest rates on consumption and investment, concluding that the monetary transmission channel of interest rates is strong. Swank and others [9] conducted an empirical study on the relationship between short-term interest rate and monetary policy regimes, concluding that the central banks with the direct inflation-targeting regime and eclectic ones pursuing the inflation target objective tend to have a strict control over the one-month rate. This in turn suggests that the short-term rate plays a more important role in the monetary transmission process in countries that promote monetary policy according to these strategies than in countries with a monetary aggregate targeting or exchange rate targeting regime.

In order to clarify explicitly how monetary policy can explain the economy, Mishkin [5] investigates the channels through which the monetary policy decisions are transmitted to the real economy. Thus, Mishkin [5] mentioned that the interest rate channel involves the use of the nominal short-term interest rate by central banks in the matter of the monetary policy decision-maker in order to influence the cost of capital and, consequently, thus supporting the investment process and economic growth.

The structure of the transmission mechanism consists of transmission channels, represented by the links of macroeconomic variables and through which the change impulse is generated, which occurred as a result of the application of monetary policy instruments available to the central bank.

In the economic literature there is no unanimous opinion regarding the structure of the transmission mechanism and the principle of combining transmission channels, these being dependent on the economic, financial and social potential of the country, as well as the implemented monetary policy framework and the operational, intermediate and final monetary policy objectives.



**Figure 1. The transmission mechanism of monetary policy decisions based on the interest rate channel**

*Source: elaborated by the author based on the synthesis of the specialized literature*

*Interest rate channel* - is the traditional channel and is often considered the main channel of monetary transmission, which reflects the impact of monetary policy on the real economy through interest rate fluctuations. Following the reduction of inflation, the central bank will increase the monetary policy rate, which will directly reflect on short-term interest rates, affecting long-term ones in the upward direction. As a result, the interest rates in real terms will rise in the conditions of assumption of sticky prices on the short run, which is reflected in declining of the aggregate demand in the short term and, respectively, decreasing the level of economic growth, generating disinflationary pressures on the inflationary process.

## METHODOLOGY AND DATA

The methodological approach of the research was based on the theoretical aspects and principles of functioning of the monetary policy decision transmission mechanism, highlighting the opportunity to determine the relationship between inflation, monetary policy rate and economic growth. Starting from the theoretical approaches of the determinants of the inflationary process, we consider that the consumer price index is a function of the monetary policy rate and economic growth.

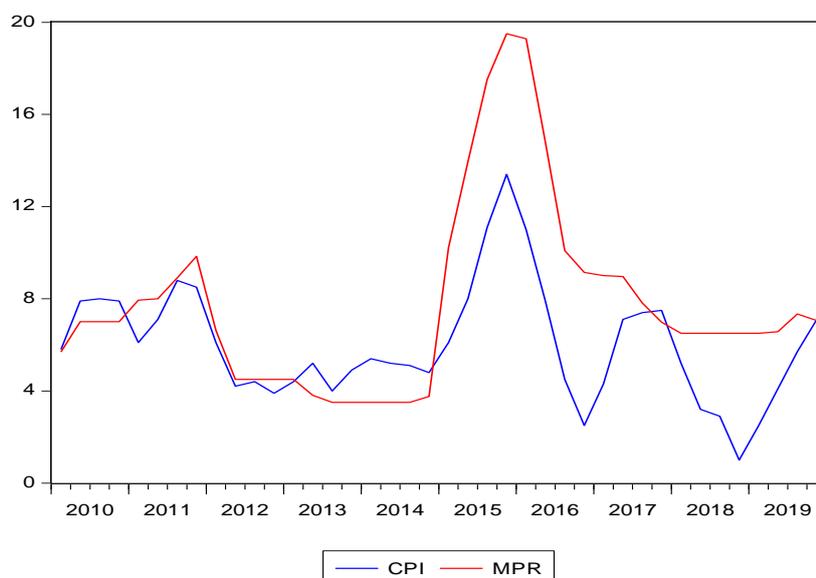
$$\text{CPI} = f(\text{mpr}, \text{rgdp}) \quad (1.1)$$

In order to identify the relationship between these variables in the Republic of Moldova, it was applied the VECM econometric model. In the research were used the quarterly data of inflation time series based on the consumer price index. The seasonally adjusted data on gross domestic product in the average prices of 2010 were used for the economic growth and, respectively, the monetary policy

rate is the NBM base rate. The time series were logarithmic in order to facilitate the interpretation of the coefficients obtained from the regression, considering them elasticities.

The use of the NBM base rate is based on the fact that, with the implementation of the direct inflation-targeting regime in 2010, it has become the main indicator for the short-term interbank money market, able to drive the conditions on money market and in the foreground to achieve the inflation target [10]. For these reasons, the period under study is the first quarter of 2010 - the fourth quarter of 2019 in order to identify and analyse the performance of the monetary policy rate in achieving the central bank's objective of price stability. It is necessary to mention that, the monetary authority of the Republic of Moldova, aligning itself with the inflation-targeting framework, set an inflation target of 5.0 percent  $\pm$  1.5 percentage points.

The NBM monetary policy strategy for the period 2010-2012 [10] highlights the main operational determinants of monetary policy promotion and reflects the transition period to the direct inflation-targeting regime in which were created the favourable conditions for the de facto implementation of the regime itself on January 2013, then the Medium-term monetary policy strategy enters into force.



**Figure 2. Inflation and base rate evolution in the period 2010-2019**

*Source: developed by the author based on the official websites of the National Bank of Moldova and the National Bureau of Statistics of the Republic of Moldova*

From figure 2 we mention that the inflationary process attenuated in the period 2012-2014, registering the inflation growth rates in the vicinity of the inflation target value of 5.0 percent. At the same time, we notice that the inflationary process in the Republic of Moldova increased mainly during the crisis in the banking system associated with the liquidation of the three banks. Thus, from March 2015, the annual inflation rate records an upward trend until December 2015, after which the inflationary process moderates and in August 2016 is positioned within the range of variation of the target. During this period, we notice that the NBM reacts to the inflation values associated with price instability by applying the main indicator on the interbank money market, thus preferring the base rate.

In order to follow the research objective, we studied the theoretical aspects of performing the Johansen cointegration test, along with the functionality principles that underlie this test. The following concept was considered essential "The purpose of fitting the VAR model and determining the cointegration rank is that one gets the opportunity to formulate and test interesting hypotheses

about the cointegrating relations and their adjustment coefficients.” [4, p.1556]. This in turn reflects that if there are cointegration vectors between variables, we should be very careful and consider this cointegration relationship, because running the VAR model under those conditions is incorrectly specified due to the omission of the error correction term, thus not giving the model representativeness. In the circumstances of the presence of cointegration between variables, the appearance of the error correction model (ECM) is welcome. At the same time, the presence of cointegration between series suggests the existence of a long-term equilibrium relationship between the researched variables [3]. Johansen's methodology is practically based on the idea of estimating the rank of cointegration, providing information about the existence of cointegration and, respectively, the number of these cointegration relations. Three dimensions of the rank ( $\mu$ ) of cointegration are mentioned [3, p.170]:

1. Rank  $\mu = 0 \Rightarrow$  there is no cointegration;
2. Rank  $\mu = n$  (the total number of researched variables)  $\Rightarrow$  all variables are stationary and there is no cointegration between non-stationary variables, respectively. In that case, the VAR estimation is welcome;
3.  $0 < \mu < n \Rightarrow$  reflects the existence of cointegration between variables and suggests running the VECM model.

Thus, in order to achieve the proposed goal and demonstrate the assumed hypothesis, we set out to complete the following steps:

1. The application of the unit root test to determine the stationarity of the variables, and this being one of the conditions for the application of the Johansen cointegration test [4];
2. Defining an optimal lag  $j$  by running the VAR model;
3. Carrying out the Johansen cointegration test with  $j$  lags and respectively, identifying the cointegration vectors;
4. Estimation of the VECM model with  $j-1$  lag. The regression equation associated with the VECM model is as follows:

$$\Delta x_t = \alpha_0 + \sum_{i=1}^n \alpha_i \Delta x_{t-i} + \sum_{i=0}^n \alpha \beta_i \Delta y_{t-i} + \delta z_{t-1} + \varepsilon_t \quad (1.2)$$

In order to identify the cointegration between the variables in accordance with Johansen's concept [4], we initially set out to test the stationary conditions of the variables under study. It was used the Augmented Dickey-Fuller test [2], in order to verify the stationarity of the time series  $\log\_cpi$ ,  $\log\_rgdp$ ,  $\log\_mpr$ . The test results are presented in Table 1.

**Table 1. Stationarity test of analysed time series**

	t-Statistic	P-value	Application of 1 <sup>st</sup> difference	t-Statistic	P-value
Augmented Dickey-Fuller test statistic for <b><i>inflation (log_cpi)</i></b>	-2.399777	0.1493	Augmented Dickey-Fuller test statistic	-3.490778	0.0146
Test critical values:	1% level -3.639407		Test critical values:	1% level -3.646342	
	5% level -2.951125			5% level -2.954021	
	10% level -2.614300			10% level -2.615817	
	t-Statistic	P-value	Application of 1 <sup>st</sup> difference	t-Statistic	P-value
Augmented Dickey-Fuller test statistic for <b><i>real GDP (log_rgdp)</i></b>	-0.204027	0.9279	Augmented Dickey-Fuller test statistic	-3.706290	0.0090
Test critical values:	1% level -3.661661		Test critical values:	1% level -3.661661	
	5% level -2.960411			5% level -2.960411	
	10% level -2.619160			10% level -2.619160	
	t-Statistic	P-value	Application of 1 <sup>st</sup> difference	t-Statistic	P-value
Augmented Dickey-Fuller test statistic for <b><i>short-term monetary policy rate - NBM base rate (log_mpr)</i></b>	-2.237669	0.1969	Augmented Dickey-Fuller test statistic	-4.169630	0.0023
Test critical values:	1% level -3.615588		Test critical values:	1% level -3.615588	
	5% level -2.941145			5% level -2.941145	
	10% level -2.609066			10% level -2.609066	

*Source: developed by the author through data processing in EViews*

The test results reflect that the variables associated with inflation, monetary policy rate and economic growth are stationary when applying the first difference I(1). This suggests testing the cointegration between the variables involved in the study using Johansen's cointegration test, in order to identify the long-term relationships between variables.

Generating VAR in levels, the results indicate that the lag 2 is the optimal selected by the all information criterions, such as sequential modified LR test statistic (each test at 5% level), final prediction error, Schwarz, Akaike and Hannan-Quinn information criterions (Table 2).

**Table 2. VAR Lag order selection criteria**

Endogenous variables: LOG\_CPI LOG\_MPR LOG\_RGDP

Exogenous variables: C

Sample: 2010Q1 2019Q4

Included observations: 36

Lag	LogL	LR	FPE	AIC	SC	HQ
0	103.8456	NA	7.40e-07	-5.602532	-5.470573	-5.556475
1	206.9015	183.2105	3.99e-09	-10.82786	-10.30002	-10.64363
2	225.6891	30.26892*	2.35e-09*	-11.37162*	-10.44790*	-11.04921*
3	230.6976	7.234549	3.02e-09	-11.14987	-9.830270	-10.68929
4	236.1612	6.981217	3.89e-09	-10.95340	-9.237921	-10.35465

*Source: developed by the author through data processing in EViews*



model indicated that the increase of the gross domestic product by 1% determines the increase of the consumer price index by 0.066% and, respectively, the increase of the NBM monetary policy rate by 1% contributes to inflation attenuation by 0.025%. This in turn highlights the active nature of the interest rate channel, along with the effectiveness of the monetary policy rate application in reaching the inflation target, while emphasizing the correctness of monetary policy decisions taken by the NBM during the research period.

The conducted researches in the context of this study highlights the opportunity to take into account the monetary policy rate in substantiating the broader econometric model along with other deterministic variables of the inflationary process in the Republic of Moldova, which directly presents the subject for further research.

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## CRYPTOCURRENCY - EVOLUTION OF THE MONEY

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**Abstract:** Money are universal tool for trade and is one of the most discussed social phenomena of our time. The modern economy is a monetary economy. In the conditions of dynamic environment, innovations and mass use of Internet services, the so-called digital money is gaining more and more popularity. cryptocurrencies. This makes the topic of cryptocurrencies one of the most current and discussed topics of the 21st century. Currently, there are many cryptocurrencies seeking to integrate and establish themselves nationally and internationally. In the conditions of a dynamically developing world, digital money is a new type of tool for carrying out activities related to the purchase and sale of goods and services between economic agents and it is quite logical that they be the subject of analysis and discussion. In this regard, the subject of this paper are cryptocurrencies, and the main goal is to define them as money of the future by tracing their evolutionary path and their essential characteristics.

**Keywords:** blockchain, business, digital money, economic, finance, cryptocurrency, world practice of cryptocurrencies

**JEL CLASSIFICATION:** A10, F15, M21, G23, O16

In the conditions of a dynamically developing economy, cryptocurrencies are a new generation of funds on the global world market. Their goal is to meet the growing needs of economic agents for sales and sales at the international and national level. Looking back in time, we find the long evolutionary path of the means of exchange and trade from natural to monetary and currency circulation. During different historical periods, money has changed its structure and form in order to meet the needs of individuals for goods and services.

Hypothetically considering cryptocurrencies as money of the future, we must point out that modern money is an evolutionary stage for homosapiens, who went through money as commodity and non-commodity, as money and as modern money. Historically, people have accepted precious metals, gold and silver as commodities that meet the requirements for money. History knows the exchange in kind - a commodity against a commodity, where one commodity is not equivalent to the other. At a later stage, copper coins appear, followed by those made of precious metals.

The evolutionary development of man, urbanization and electronics, new technologies, electronic payments create conditions for the global foreign exchange market to enter the idea of cryptocurrencies. A real transformation of the monetary system will occur when the incoming cryptocurrencies establish themselves as the money of the future. It is important to note that today, in the age of technology, electronic money is entering circulation, which is easily portable, guarantees security and anonymity. It is possible that payment via Internet services is an alternative and a way to use digital currencies or cryptocurrencies. In this regard, the transactions are without intermediation and control of banks, because in cryptocurrencies control is decentralized and there are no opportunities for seizure. It is logical that digital currencies, when they become active currencies, will not only change monetary systems, but will open new horizons for money circulation and sales on

the world market. We live intensively, in an age of innovations and unique technical discoveries, encounters with new and unknown species of the animal world, and why not a new money circulation. Whether cryptocurrencies will become the money of the future is like Hamlet's question "To be or not to be?" Time will tell. Today, from the point of view of market capitalization, we can arrange the current cryptocurrencies as follows: Bitcoin, Ripple, Litecoin, Peercoin, Auroracoin and others. Despite the rapid development of mankind in the field of economics, politics, information technology is difficult to predict the future of the cryptocurrency system.

The future of cryptocurrencies tomorrow will show whether they will establish themselves as the main means of exchange. It is now possible to rely on blockchain technology for reporting transactions and exercising control over the created new units. It can be said that cryptocurrency is a type of digital currency, and the first decentralized known cryptocurrency was Bitcoin in 2009. The basic technical system for cryptocurrency was created by a person with the pseudonym Satoshi Nakamoto, who used the SHA-256 cryptographic hash function for the proof-of-work function. According to historical data, Litecoin was launched in October 2011, a successful cryptocurrency using a "script" as a hash function instead of SHA-256. Other cryptocurrencies may emerge, such as Peercoin, which uses a hybrid function between proof-of-work and proof of share. [1]

According to statistics, after March 2015, many cryptocurrencies were created similar to the first. It is important to note that cryptocurrencies are alternative currencies and are therefore difficult to accept. It is possible that the development of financial innovations will lead to the creation of cryptocurrencies such as Monero, Ethereum, Dash and NXT, which are "second generation" cryptocurrencies with more advanced options (hidden addresses, contracts, side chains and assets). Historically, the Monero cryptocurrency is open source based on the "Crypto Note" and means "coin". It is characterized by decentralized management, confidentiality, security and instant transactions.

The popularity of cryptocurrencies is a challenge for central banks, their impact on the economy and confidence in fiat money. The World Bank, through the interaction of international monetary systems and national governments, regulates the movement and supply of currencies through bank registers and the printing of fiat money, but they are unable to produce cryptocurrency. When we enter the field of cryptocurrency, the term "cryptocurrencies" used is due to the "hash" functions used in currency generation. Cryptocurrencies, like existing monetary systems, are a medium of exchange, but the special feature is the decentralized peer-to-peer network and cryptographic projections, where the role of central banks or financial institutions in transactions is not necessary.

The advantages of cryptocurrencies are related to a decentralized network for exchange of transactions, instant and irreversible transfer via the Internet without an intermediary, elimination of double spending, stability and security of the code and the network against counterfeiting, limited supply, information on transactions in a public register similar to accounting book. It is important to note as a positive that it is maintained by independent persons (diggers), who through computer programs record the transactions to the ledger, which contains transactions from the creation to the present. In this regard, it can be noted that the ledger is a blockchain and new blockchains with their own transactions are constantly attached to it. Cryptocurrencies also have their negatives, associated with the difficult perception by the masses, due to the lack of material contact with the currency; the negative attitude of central banks due to the fact that they are losing control of the new currency; widespread perceptions of uncertainty and lack of confidence in cryptocurrencies.

Cryptocurrencies are a brain experiment of the eternally searching human mind, of its aspirations to constantly increase its wealth, but we must not forget for a moment that the monetary

resource can not only increase but also decrease. As a new financial instrument, the cryptocurrency may not yet be known, but this does not mean that it will be ignored. When we want to invest in cryptocurrencies, we must accept that we are entering an unknown financial, commercial and economic environment. The above is a reason to note that in conditions when there is no traditional knowledge, everyone makes his own way to the global crypto market. It is never too late to invest in a new currency, but we must adhere to the familiar rules of the current money market, be careful when investing, do not sell when the price falls, but to buy, not to moisture too much and keep calm and great patience. In a fast-paced economy, cryptocurrencies are the money of the future. It is possible - money, but without the familiar currency. Let us not forget that man, as long as he lives and as long as humanity inhabits the planet Earth, always has a choice. Based on the literature review, it can be concluded that the opportunities provided by crypto-economics are unlimited and easily accessible to economic agents. In this regard, the entry of the crypto market is associated with the purchase of currencies through the stock exchange, which allows the exchange of dollars or euros into cryptocurrencies, or to dig currencies, and may find an acquaintance who has such a currency and is willing to part with part of it for cash on hand.

The development of cryptocurrencies is linked to events in Venezuela. It is important to note that the Venezuelan government is turning to the cryptocurrency in times of crisis over economic isolation imposed by the United States and strained relations between the two presidents, Nicolas Maduro and Donald Trump. Venezuela is pre-selling its cryptocurrency "petro" after President Nicolas Maduro announced a plan to create its own cryptocurrency in early December 2017. The transition to cryptocurrency is a way to deal with the financial blockade by US President Trump's financial and economic authorities, which is deepening the country's economic crisis. [2]

According to statistics, in early January 2018, President Maduro ordered the issuance of 100 million units of the national cryptocurrency and on February 20, 2018 began pre-sale of the virtual currency "Petro". Regarding the event, Deputy Prime Minister El Aisami said that "Venezuela is becoming the first country to sell its cryptocurrency, secured by its own reserves and natural resources". [3] This economic act will be backed by reserves of natural resources such as gold, gas, oil and diamonds. At the same time, it is expected to attract investments from Qatar, Turkey, Middle Eastern countries and European countries. Initially, Venezuelan "petro" will not be exchanged for Venezuelan bolivars. In fact, the success of overcoming the financial crisis through Venezuela's cryptocurrency, Petro, is not entirely clear. The cryptocurrency introduced is a fact, and the endeavor is extremely bold. It is only natural that the new cryptocurrency "petro" will create opposition discontent, which will openly declare the currency illegal. In fact, the local population doubts that this action will help the Venezuelan economy. Political forces believe that the loss of Venezuela is a gain for OPEC (Organization of the Petroleum Exporting Countries). It is possible that virtual cryptocurrencies will also attract non-traditional lenders from Russia and China, from which new fresh money will enter the country.

It is important to note that Venezuela's political and financial groups are divided. In the presence of hyperinflation, the country is facing a collapse, oil production is declining and if this decline continues, the likelihood that Venezuela will not be able to pay its debts increases. There is also the view that the cryptocurrency "petro" is an "excellent idea" that can unite countries and governments that have problems with US sanctions and the fact that the US dollar is the world's reserve currency. It is important to note that Venezuelan cryptocurrency "petro" can be acquired by individuals and legal entities, and that there is no legal barrier for them not to be Venezuelan citizens, and that there

are no restrictions on the nationality of buyers. According to President Maduro, out of a total of 100 million units released, 82.4 million units will be available to investors. The price of a Venezuelan "oil" will be equal to 60 dollars, as much as a barrel of Venezuelan oil currently costs. [4]

Venezuelan economist Luis Enrique supports the cryptocurrency "petro" and describes it as an interesting phenomenon in which anyone, regardless of territory, can acquire "petro" for a convertible currency and thus circumvent financial sanctions and the financial blockade of Venezuela. At the same time, "petro" acquires a wide range of possibilities because it can be used to pay for goods and services, including taxes, fees and duties in the country, as well as to be exchanged for cash in circulation. It is logical for the exchange rate to be determined by the volume of operations carried out in exchange offices that are licensed by the authorities for their activities. In this regard, pessimistic economic circles describe these plans as a "smokescreen" and emphasize that the cryptocurrency "petro" will not lead the Venezuelan economy out of hyperinflation and financial sanctions. In this direction is the information that Russia is considering launching a digital version of the ruble, which would use the virtuality of cryptocurrencies to circumvent the sanctions imposed on it by the West.

It is possible in the modern world that digital cryptocurrency is perceived as an alternative currency. It is important to note that in Puerto Rico, after the devastating hurricane of September 2017 with the gentle name "Maria", the country is recovering. Logically, the island has been swept away by the hurricane and needs mutual assistance to rebuild its infrastructure. Even before the disaster, the country was not in good economic and financial condition, which motivated Puerto Ricans to accept foreign cryptocurrency entrepreneurs who wanted to help rebuild Puerto Rico and turn the country into a "crypto paradise", the first country with an economy driven by digital money. In this "crypto paradise" many of the taxes are abolished, the population automatically exempt from the federal individual income tax and capital gains tax, the business tax is paid on very favorable terms and American citizenship is retained. [5]

Cryptocurrency holders hope to show the world the functioning of the city of the future by using blockchain technology, which serves for transactions in parallel with the development of a new digital currency. The choice of Puerto Rico as a cryptocurrency paradise is associated with the use of the natural and economic crisis, which leads to the forced reorganization of society. In fact, cryptocurrencies are not just money for economic recovery, but funds for future payments. Based on the facts of the transition period, when the potential of cryptocurrencies and blockchain technology is not well explored, initiatives such as those in Puerto Rico should be approached with caution. Statistics, albeit scarce, reveal that cryptocurrency enrichment is at a time of a boom in the digital money market. Virtual money is everywhere, it is a technological product and the market capitalization of the 600 cryptocurrencies actively used is growing, for which the World Financial Community must decide. All this can summarize that cryptocurrencies are a universal means of payment and in the distant future may be a competitor to the generally accepted financial system.

\* \* \*

The current development is the reason for defining cryptocurrencies as the money of the future. In conclusion, they should draw the following conclusions - money goes through a long evolutionary path. Based on the presented literature review, I believe that cryptocurrencies are an integral part of the evolution of the monetary system. With the development of Internet services, cryptocurrencies are increasing their popularity and expanding their application. The entry of cryptocurrencies into the real financial economy is an indicator of their rapid adaptation in the world of money. Changes in the economic business environment lead to the search for new sources of income in order to meet the

needs of economic agents for goods and services. In a rapidly evolving, dynamic business environment linked to technological progress and innovation, cryptocurrencies are an opportunity to increase financial capital in order to provide more and more affordable financial goods to individuals.

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## FACTORS CAUSING BANKRUPTCY IN THE CORPORATE SECTOR

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**Abstract.** *The institution of bankruptcy is necessary and obligatory in any market economy. In most cases, a company's bankruptcy is determined by the simultaneous effect of several causes, both internal and external. This problem has a significant importance in the field of the management theory and practice, internal planning and control of the enterprise. The study of different approaches regarding the factors causing bankruptcy identification is characterised by a large variety of theoretical and applicative approaches. It is impossible to formulate some recommendations of bankruptcy analysis or/and assessment in corporate sector without knowing the justified essence of bankruptcy causes. In the work hereby, some aspects of the causes of bankruptcy in the corporate sector have been analysed. To achieve the purpose of the research, the dialectical method with its inherent processes were used. The presence of these aspects of scientific investigation gives the article originality and update.*

**Key words:** bankruptcy, corporate sector, factors, external, internal.

**JEL CLASSIFICATION :** O17, B5, M410

### INTRODUCTION

Bankruptcy is an indispensable part of every entity tending to meet the demands of the market economy, irrespective of the activity profile, legal form, dimension and socio-economic space where it activates.

Nowadays, the problem regarding the factors that may cause bankruptcy is actual and much discussed theme in market economy. The bankruptcy of a company has negative impact on all subjects in relationship with this entity. Possibility of evaluating and estimating the factors that may influence on bankruptcy in corporate sector is an advantage for all external and internal users. Based on the assessment and identification of general factors of bankruptcies, companies are able to take necessary corrective action in time.

On July 24, 2020, the Public Services Agency of the Republic of Moldova in the Official Gazette no. 188-192 (7516-7520) published the opinion announcing the list of legal entities automatically removed from the State Register of legal entities whose activity was suspended. The published list contains the names of 968 companies, LLCs and individual entrepreneurs.

Therefore, it is important to outline the problems and the main bankruptcy causes at the level of the companies. The objective of this research is to study the different approaches regarding the factors causing bankruptcy in the corporate sector. It is impossible to formulate some recommendations of bankruptcy analysis or/and assessment in corporate sector without knowing the justified essence of bankruptcy causes. In the work hereby, some aspects of the causes of bankruptcy in the corporate sector have been analysed. To achieve the purpose of the research, the dialectical

method with its inherent processes were used. The presence of these aspects of scientific investigation gives the article originality and update.

## **LITERATURE REVIEW**

The problem of bankruptcy and its explanatory factors are widely debated in the literature. It is important for policy-makers to know the causes of bankruptcy, in order to implement measures to increase the efficiency of restructuring, insolvency and discharge procedures. The literature on bankruptcy has typically focused on the prediction of bankruptcy risk. Therefore, it is worthwhile to analyse the causes of bankruptcy. Ooghe and De Prijcker (2006) [8] presented a general bankruptcy cause model that distinguish four main types of failure processes: unsuccessful newly established companies, ambitious growth companies, dazzled growth companies and gradual deterioration of established companies. Their findings of bankruptcy causes were based on a case study of bankrupt of 12 Belgian companies. Nevertheless, these causes can be generalized as universal bankruptcy causes. In addition, Ooghe and Waeyaert (2004) [7] suggested a 'conceptual failure model', in which they differentiate five intertwined groups of external and internal causes of bankruptcy. Euler Hermes Kreditversicherung and the Centre for Insolvency and Reorganization at the University of Mannheim published another comprehensive study of bankruptcy causes in Germany in November 2006 [4].

This study clearly shows that a typical case of a bankrupt German company would be caused by a mix of bad financial management, no/poor controlling, and an authoritarian leadership style, not necessarily recently established. Another analysis of bankruptcy causes in Germany is based on the studies of Wieselhuber & Partner. The research of Wieselhuber & Partner confirmed and approved Euler Hermes Kreditversicherung and the Centre for Insolvency and Reorganization study results. The two presented German studies have coherent results and denote poor management as a primary origin of business failures in Germany.

Branko Novak and Domagoj Sajter, 2007 [1], have done very few systematic researches in the field of bankruptcy in Croatia. They found out that in Croatia the highest responsibility for success, as for a bankruptcy, lies in the field of management, much like in the rest of Europe. Also worth mentioning are the models of Dyrberg, Lee and Grunert (Dyrberg 2004; Lee et al. 2003; Grunert et al. 2005), [2,5] the main advantage of which is that these models are related to macroeconomics factors, business sector or corporate governance.

In Central and Eastern Europe, due to, among other factors, the geopolitical situation and the introduced economic system, the institution of bankruptcy began to function and became the subject of researcher interest in the first half of the 1990s.

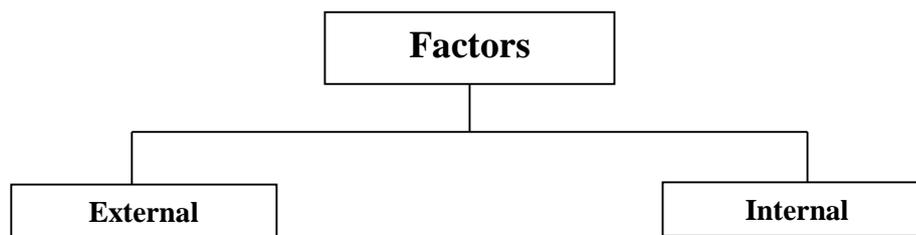
## **RESEARCH METHODOLOGY**

This paper seeks to answer the following question: What are the factors that may cause corporate bankruptcies? Therefore, the objective of our research approach was to analyze the level of research in the field of bankruptcy causes in accordance with the latest global research trends. For this purpose, the method of analysis of the scientific literature was applied. The publications chosen as the research base were mainly selected from the Google Scholar and ResearchGate databases. Moreover, the work hereby presents and provides an introduction in this research area. This study is one of the few researches that involves the analysis of the scientific literature in this area of research.

## RESULTS AND DISCUSSIONS

According to the literature review, it is not possible to designate a single reason that would be 100% responsible for bankruptcy of a company. The failure of a firm is the result of a whole set of factors, factors that often overlap with each other, even if their sources of origin are different - endogenous and exogenous. That is why the correct identification of the factors is the basis for an efficient management. This approach allows us to determine the bankruptcies causes of a company.

By content, these factors can be grouped according to their sources of origin as **follows**:



**Figure 1.** Factors causing bankruptcy in the corporate sector

Source: author compilations

Usually, **external factors** do not depend directly on the entity; they are the result of exogenous causes related to the general economic situation of a country: inflation, anarchy, political and economic crises, ecology, customs duties, and the existence of a more favourable regime. They are factors over which the corporate sector cannot have a direct influence, but whose significant change can be predicted or can indirectly influence the bankruptcy of a company. It is possible to delimit the factors that affect all or almost all companies in the same way and the factors that influence only certain companies or the factors that oppose different groups of companies in the opposite way.

Neli Muntean (2019) in the monograph "*The analysis of financial stability in the corporate sector*" [6] delimits four segments of external factors, each with direct and indirect influences on the results of the activity of the corporate sector, respectively:

1. The first segment refers to *political factors*. As for political factors, they incorporate the sovereignty of nations, legal systems, government policies, philosophies, interest groups, political parties. Some of these factors can affect the entire corporate sector, for example, changes in tax legislation. Others - only a small number of entities, for example, antitrust laws. However, they are essential for public interest entities, for example, the alignment of political forces or the results of elections. However, to some extent, directly or indirectly, political factors influence all entities.

2. The second segment consists of *economic factors*. Economic factors refer to general economic conditions (growth, unemployment rate and GDP), monetary policy factors (interest rate), consumer price factors (consumer price index and inflation), factors related to international operations (exchange rate), largely influencing a country's business environment.

3. A rather important segment is that of *social and cultural factors*. N. Muntean in her work delimits the following sociocultural factors that the entity most often faces: birth rate; mortality; the level of immigration and emigration; life expectancy index; income level; lifestyle; educational standards; shopping habits; attitude towards work; attitude towards rest; attitude towards the quality of goods and services; the need to control environmental pollution; energy saving, attitude towards government; interethnic problems; social responsibility; social welfare.

4. Finally, it is necessary to highlight the segment of *technological factors*. Considered the main engine of an expanded production - social progress. Revolutionary technological changes and discoveries in recent decades, such as robotics, the penetration of computers into people's daily lives, new types of communication, transportation, weapons, and more, are both great opportunities and serious threats to them, whose impact managers need to be aware of and which they need to assess. Some discoveries can create new industries and close old ones.

At the same time, considering the global impact of the COVID-19 pandemic, I consider appropriate to supplement the number of segments with the *Biological Factors Segment*. The fifth segment is currently a novelty factor for the economy not only of the Republic of Moldova, but also worldwide. The crisis caused by the pandemic has so far increased the number of closed companies by about 60%. Many large companies worldwide are announcing their bankruptcy. On July 24, 2020, the Public Services Agency of the Republic of Moldova in the Official Gazette no. 188-192 (7516-7520) published the opinion announcing the list of legal entities automatically removed from the State Register of legal entities whose activity was suspended. The published list contains the names of 968 companies, LLCs and individual entrepreneurs.

**Internal factors** also have a significant influence on bankruptcy. Internal factors from several points of view directly characterize the entity: productive potential, technical assurance, level of intuitive and technical specialization, work organization, choosing the type of contracts with investors or customers. At the same time, internal factors are those over which the entity can directly exercise influence. Therefore, according to the analysed literature, can be distinguished the following internal factors that can cause bankruptcy in the corporate sector:

1. human potential,
2. the technical-material potential,
3. financial potential etc.

Their cumulative impact on bankruptcy in the corporate sector depends not only on the relationship between factors, but also on the stage of the production cycle in which the entity is the competence and professionalism of its managers. Practice shows that a significant number of failures of an entity may be due to the inexperience and / or incompetence of managers, their inability to take into account changes in the internal and external environment.

## CONCLUSIONS

According to the literature review, it is not possible to designate a single reason that would be 100% responsible for bankruptcy of a company. The failure of a firm is the result of a whole set of factors, factors that often overlap with each other, even if their sources of origin are different - endogenous and exogenous. External factors do not depend directly on the entity; they are the result of exogenous causes related to the general economic situation of a country. Neli Muntean (2019) in the monograph "*The analysis of financial stability in the corporate sector*" [6] delimits four segments of external factors, each with direct and indirect influences on the results of the activity of the corporate sector, respectively: *political factors*, *economic factors*, *social and cultural factors* and *technological factors*.

At the same time, considering the global impact of the COVID-19 pandemic, I consider appropriate to supplement the number of segments with the *Biological Factors Segment*. The fifth segment is currently a novelty factor for the economy not only of the Republic of Moldova, but also worldwide.

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## KEY CONCEPTS OF CREATING AND IMPLEMENTING INNOVATIVE BUSINESS MODELS

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**Abstract.** *Actuality: creation of business models and their innovative transformation. The aim is the study of business models. Methods: SWOT, benchmark comparisons, matrix, value chain. Results: business models were systematized in companies in the world and in Moldova.*

**Keywords:** *business model, organization, efficiency, development, implementation.*

**JEL CLASSIFICATION :** M10; M13

### INTRODUCTION

The importance and relevance of this article is dictated by the rapidly changing business environment and new challenges. The task of creating business models and their innovative transformation is of great importance for doing business successfully. In this regard, the value of this publication lies in understanding the key concepts of business models and identifying the agents of change on an innovative basis.

According to Peter Drucker, "The business model is assumed to be responsible for who your customer is, how much value you can create/add for the customer, and how you can do it at an appropriate cost". Another American scientist, Clayton Christensen, the author of the term "disruptive innovation", defines several components in the concept of a "business model": value proposition, revenue formula, company's core resources and key business processes. [4; p.41]

Modern business development takes place with rapid changes and constant transformations of business processes, caused by the relentless development of production technologies, as well as the modernization of the processes of successful implementation of the created "values". This may be achieved through the timely modernization of the current business model, by identifying its strengths and weaknesses, opportunities and risks, using the classic SWOT analysis.

Many companies are working on excellent high-tech products. Especially in developed countries, the business world has always been able to amaze with its innovative ability. Why do companies, be it in the East or in the West, suddenly lose their competitive edge? Giants such as Agfa, AEG, American Airlines, Lehman Brothers, DEC, Grundig, Loewe, Nakamichi, Nixdorf Computer, Motorola, Nokia, Takefuji, Triumph, and Kodak are instantly losing ground after many decades of successful work. What is their mistake? The answer lies on the surface. These companies have failed to adapt their business models to the changing environment. [2; p. 9]

The aim of this article is to research business models, demonstrate the success of new approaches, and design transformations of business models in response to modern realities. The ultimate goal of the work is to describe these transformations. This knowledge will prove to be

essential for modern companies, helping them to continuously adapt to the conditions of a changing market. The expertise will lead to winning the competition, to development and prosperity.

Research objectives:

- Examine, research, analyze the literature and experience of various business organizations for the use and modernization of operating business models.

- Review the functioning of a business model, using the example of a Moldovan company,

- Draw conclusions and recommendations for business development in the long run.

Description of the problem. Companies in Moldova in modern realities get a unique chance of rapid development, but at the same time are subject to acquisition by progressive international companies that can enter the Moldovan market and easily leave domestic companies without a single chance to survive. The secret to success is choosing the right business model.

Using the example of the Moldovan company "Kamoto" SRL (Ltd.), founded in 2013, we can review the dynamics of its development by fostering three business models:

1. Wholesaler (distributor),
2. Retailer (chain stores),
3. Online store.

## **THEORETICAL FRAMEWORKS AND METHODOLOGY OF RESEARCH**

The business model represents a description of the rationale of how the company creates, delivers and captures value for itself, as well as for the customer.

Each business model consists of three parts:

- everything, that deals with designing and producing a product,
- everything, related to selling a product, from finding the right customers to distributing the product,
- everything, reflecting how the client will pay and how the company will create value.

Basing on the studied literature, I identified and systematized the methods that need to be used when developing the models:

1. Classic SWOT analysis;
2. The method of benchmarking (international, global context);
3. Matrix methods for analyzing transformations of business models (I. Ansoff) [3; p.114-118]:
  - balance of the life cycles of a company's product,
  - Product-Market matrix,
  - triple life cycle of Product-Technology-Demand;
4. Michael Porter's research method - the company's value chain. [8; p.320]

## 5. Method of financial diagnostics.



**Picture 1.** Business Model Canvas

Source [7; p. 42]

The most popular and relevant business modeling tool today is the Business Model Canvas, developed by Alexander Osterwalder and Yves Pigneur. This template was presented in the work "Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers" and is still used by companies of various levels, from startups to multinational corporations. Canvas (or as it is sometimes translated: template, mockup) is a universal language for describing, presenting, analyzing and transforming business models.

Given below is the structure of the stages of modernizing an effective business model, which represent an analysis of the current model by obtaining answers to key questions:

### 1. Analysis of the business model of the industry.

- How does our industry work?
- What type of competition prevails?
- What types of players and business models are represented in it?
- How are they connected?
- In what way and why are industry leaders changing?
- What core competencies of marketing should they have?

### 2. Analysis of the current business model of the company.

- How is our company organized?
- What is the business / s of the company?
- What are our signature core competencies?
- What core competencies of marketing do we need to acquire?

–What are the contradictions between the individual components and processes of the business model?

- How do we stay competitive?
- What isn't effective in the existing business model?
- In what way are we embedded in the industry's business model?

### **3. Benchmarks of the company's development strategy.**

- What basic strategy are we implementing?
- What are the strategic goals we are planning to achieve?
- How is our strategy formulated?
- What changes in the existing business model does the implemented strategy require?
- What is the typical business model that best suits our strategy?
- How will we position ourselves, according to a number of key parameters: the degree of vertical integration, the degree of diversification, the degree of intelligence of the finished product?

### **4. Defining a new business model.**

- What typical business model is the new business model based on?
- What are the main work characteristics of a business model?
- What are its specifics?
- What are its advantages and disadvantages?
- How is it embedded in the industry's business model?
- What is the estimated cost-effectiveness of the new business model?

### **5. Specification of the new business model.**

- How do the main components of a business model correlate?
- What is appropriate to keep in the new business model from the old one?
- How should production, innovation, marketing, etc. be arranged?
- How should management system be designed?
- What are the mechanisms and procedures to ensure that the business model works effectively?

Common factors driving the transformation of a company's business model are:

- development of telecommunication technologies and the Internet.
- changes in the competitive environment.
- signs and consequences of macroeconomic shocks and crises.

The most essential aspect, defining the degree of influence of certain factors, is the characteristics of the company's business model itself: how developed are the promotion channels and to what extent they are used, how the existing product is formed and a new product is designed, the way management and business processes are organized.

## **PRACTICALITIES AND RESULTS OF THE STUDY**

### **World leaders**

The study of business models was based on the example of world leaders:

- wholesaler (Coca-Cola),
- retailer (Walmart),
- online store (Amazon).

### **Research company**

In the future, we will be adapting the strong points of the business models of world leaders to the Moldovan company "Kamoto" SRL (Ltd.).

In the course of the work the Moldovan company "Kamoto" SRL (Ltd.) is studied, within its framework the adjustments of business models are carried out in the context of modern trends.

The Kamoto trademark appeared for the first time on the Moldovan market in 2014. Kamoto SRL (Ltd.) is the exclusive distributor. Today in Moldova Kamoto presents a wide range of high quality power tools, gardening, power and construction equipment for home use.

Exceptionally high quality products of various product groups are manufactured under the Kamoto trademark. The main factories, producing Kamoto products, are located in China, but at the same time there is a strict selection of manufacturers, quality control of components and spare parts, regular participation in exhibitions in order to expand the pool of suppliers and continuous improvement of the quality of products, given the achievements in the field of R&D.

When starting a company in Moldova, a wholesale business model was used, which showed good dynamics of sales growth. In pursuit of the stability of the company's development in the conditions of glut in the market and intense competition, the company introduced a retail business model by opening its own chain stores. As 3 years of the stores' activity passed, the volumes of retail sales approached the volumes of wholesale. In the context of rapidly developing online commerce, the company has opened its online store and is developing a new promising business model.

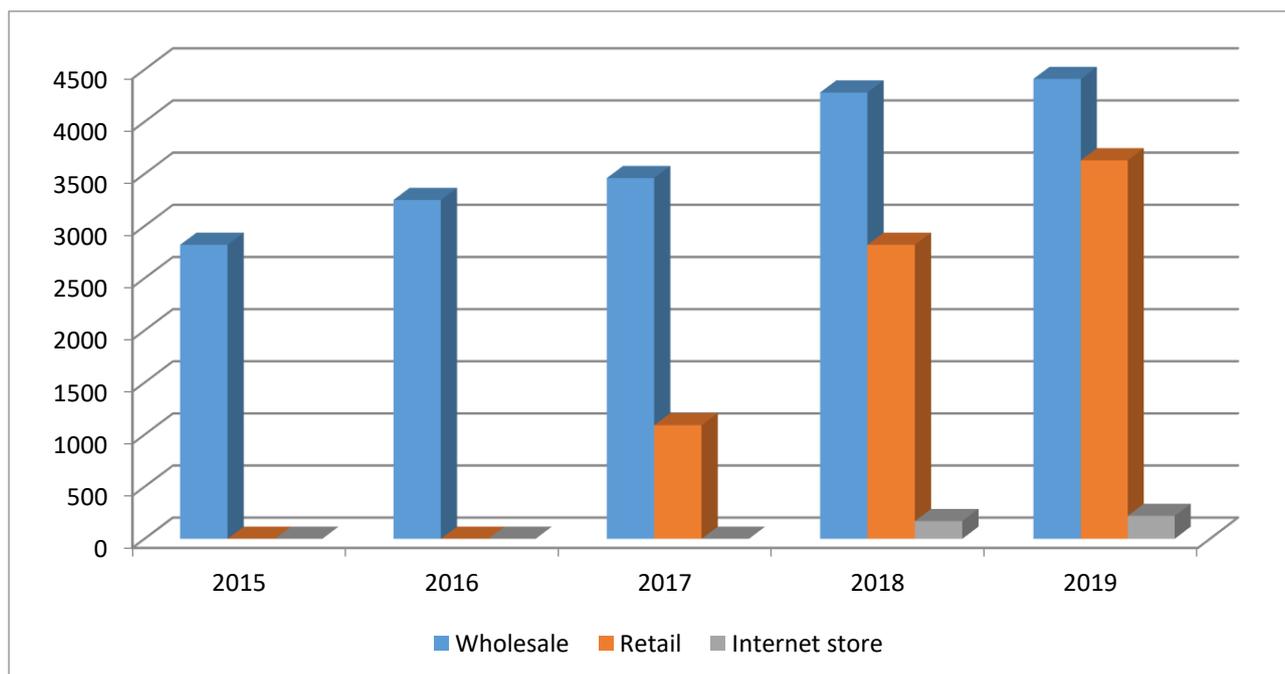
The company "Kamoto" SRL is dynamically developing, as constant monitoring of the situation on the sales market and analysis of the main financial and economic indices allows it to respond to external and internal development threats in a timely manner.

**Table 1. Structure of sales revenue by type of activity of Kamoto SRL (Ltd.) for the period 2015-2019**

Year	Unit of Measurement	Wholesale	Retail	Internet store	In Total
2015	thousand lei	2820	0	0	2820
2016	thousand lei	3250	0	0	3250
2017	thousand lei	3460	1090	0	4550
2018	thousand lei	4280	2820	170	7270
2019	thousand lei	4410	3630	220	8260

\* The data in the table and chart is notional, but the proportions are maintained.

Compiled by the author, based on the work of the Kamoto SRL enterprise.



**Picture 2.** Diagram of the structure of sales revenue by type of activity of Kamoto SRL for the period 2015-2019

*Source: The data in the chart is notional, but the proportions are maintained. Compiled by the author based on the data of the Kamoto SRL enterprise. Business models will continue their innovative adjustments within the company, which is the subject of future research.*

## CONCLUSIONS

Considering lessons learned in the field of creating and developing business models, the following conclusions can be drawn:

- Conducting scientific research in this area contributes to the creation and development of business models on an innovative basis,
- A systematic multifactorial approach is required, when studying business models,
- Dissemination of business modeling experience is required in various fields of activity.

## RECOMMENDATIONS

- Training and development of staff in all business units of the company, in the field of marketing, finance and all types of management (HR, IT, quality, etc.),
- Monitoring of the financial performance of the company,
- Development of relationships with partners and clients and optimization of addressing their needs.

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## METHODOLOGICAL AND PRACTICAL ASPECTS OF DEVELOPING A BALANCED SCORECARD ON AN INNOVATIVE BASIS

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**Abstract.** *This article examines a new approach to implementation of a balanced scoreboard (BSC) in Moldova using innovations, allowing identifying a number of effectiveness parameters and their optimal values. The BSC is an important tool and a possibility for timely intervention influencing the process of achieving high results in business environments.*

**Keywords:** *balanced scorecard, methodology, innovations, marketing, strategy, innovations.*

### JEL CLASSIFICATION: M10

### INTRODUCTION

A traditional approach to an enterprise as an algorithm for increasing turnover of sale of goods and generation of profits currently becomes irrelevant.

Relevance of the topic is conditioned by the fact that development of a new enterprise management system in the conditions of fierce competition in the markets and a new economic crisis requires introduction of corrective methods and actions in the methodology of enterprise performance evaluation.

Insufficient attention to the balanced scorecard (BSC) is observed in the Republic of Moldova; and it is a process that is not entirely understood. This is due to the fact that while solving a problem there is uncertainty with selection of performance indicators and identification of optimal values of these indicators. This article discusses an approach to solving this problem in connection with application of innovations, which allow for identifying both a number of effectiveness parameters and their optimal values at enterprises in the RM under the current economic conditions. The purpose of this work is to study theoretical and practical aspects associated with possibilities of their development and implementation at enterprises.

In order to achieve that goal, the following issues have to be resolved:

- To explore key concepts in the world practice of the balanced scorecard;
- To analyze all sorts of viewpoints on the topic in question;
- To study key BSC indicators and to systematize them;
- To determine ways for implementing the system;
- To draw conclusions and recommendations on developing the system based on the principles of balance in the rapidly changing business environment.

## THEORETICAL ASPECTS AND METHODOLOGY OF BSC RESEARCH

A balanced scorecard provides to a manager a tool and a possibility for timely intervention and exercising influence on the process of achieving high results under harsh conditions of fierce competition. That is why it is vitally important for managers and staff members to understand goals, strategies, tasks and methods for achieving them. The methodology establishes the relationship between theoretical and practical aspects of strategic planning of the enterprise. The balanced scorecard envisions analysis of strategies through the prism of a comprehensive system of evaluating all types of activities in the company. It gives answers to four most important questions:

- How do shareholders see the enterprise?
- How do customers assess the enterprise?
- What in-house business-processes require improvement?
- What ways could provide for achieving optimizing enterprise operation?

The composition and structure of the balanced scorecard is shown on Figure 1.

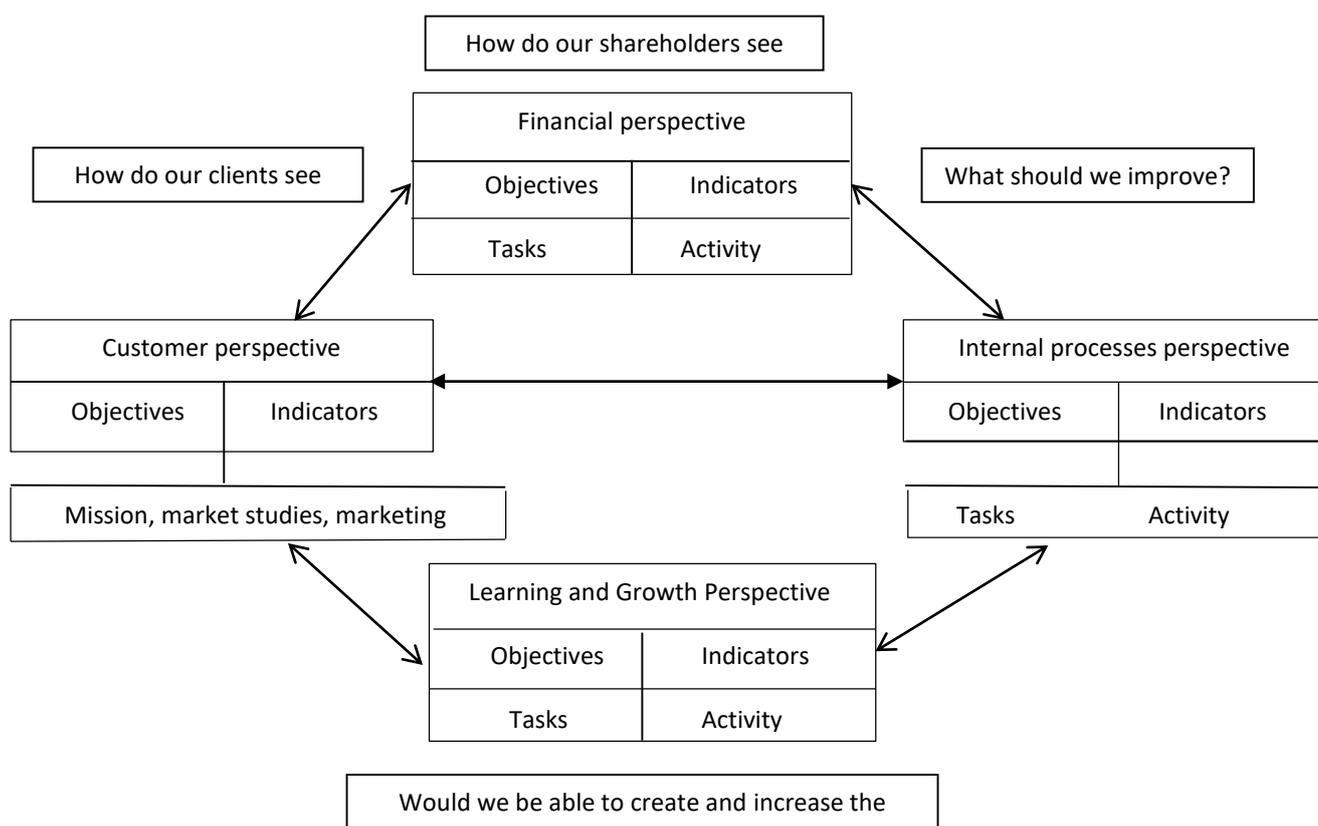


Figure 1. Key elements of the BSC [1,p.17]

In the context of the BSC, one can answer the question: How to create and develop new goods or services. Realization and implementation of this process should become one of the most purposes of any entrepreneur in order to achieve success in the long-term perspective. The BSC envisions investments in personnel education and development, enhancement of the technological process on the basis of establishing close relationship between strategic objectives of the enterprise and current in-house operations [1,2,3].

The BSC gives answers to 4 key and main aspects of enterprise functioning: evaluation of the enterprise by shareholders, customers, assessment of in-house business processes, personnel training and growth [2].

Therefore, it is very important to pay attention to the following provisions when reorganizing the main strategy of the enterprise. Implementation and use of the balanced scorecard is directly related to implementation of the enterprise strategies [7,p.35]. The BSC should be viewed not only as a scorecard, but also as a comprehensive business-organization management system. BSC researchers focus their attention on the fact that the balanced scorecard is used to change flow of processes in the organization in order to achieve success-oriented successful operations of the enterprise in the long-term perspective. The balanced scorecard program should begin with recognition of the fact that it is not a "metrology" kind of project, but rather a change-driven project [4,6].

### **PRESENTATION OF THE RESEARCH RESULTS**

Development of the BSC on the innovation basis consists of four stages the compliance with which is recommended for enterprises functioning in the RM that I studied and that are subjects of the present research: "Sonaris" SRL, "ED-Color" SRL, "Montatorul" SRL, "Creit" SRL, "Copperhand" SRL, "Vinum" SRL, "Sanflo" SRL, "Zerododici" SRL.

The main stages of the research are:

1. Integration of the BSC into the managerial process by means of transforming perspective plans and strategies into a set of goals and activities.
2. Setting goals and objectives, aligning, coordination, providing for communication from the highest management level to auxiliary positions.
3. Planning of activities, formation of tasks, timing and allocation of resources.
4. The feedback response and research consist of testing the theoretical basis of the strategy and adapting it based on the obtained information and indicators [3, C.58].

In distinguishing the stages mentioned above, we were guided by works of Robert S. Kaplan, David P. Norton, M. Sonders. Practical application of the balanced scorecard is recommended to be used at the studied enterprises. In my opinion, the following represent the strengths:

- The BSC is a strategy implementation tool that allows for comprehensive investigation of a firm and evaluation of relevance of the functioning strategy.
- The BSC could be used to manage the process of enterprise value increase.
- The BSC is a tool for informing external customers.
- The BSC could be used to clarify the formulated strategy.
- Creation and maintenance of the platform for collecting information, evaluation and analysis of indicators.

Application of the BSC at investigated enterprises consists of several stages: identification and determining the problem, elaboration of strategic goals, finding ways for implementing, implementation, and analysis of BSC functioning. For example, as for the financial aspect, a conflict of interest arises between increase of the value of the enterprise or income, and as for clients – price and quality. In addition, difficulties that domestic organizations face include collection and automation of indicators that the balanced scorecard requires.

The balanced scorecard at the studied enterprises is capable of integrating not only strategic and operational areas of the company, but it also encompasses the whole system to promote the

strategy at all levels of the business-organization. Based on the sequence of actions, the BSC allows deciding on the choice of ways for implementing the strategy, orienting top managers to training and communication over the complete hierarchical chain of the organization.

In the current reality of COVID-19 pandemic, those who use innovation approaches to business-processes were able to quickly re-orient and preserve their profitability. "Vinum" SRL is a manufacturer of high-quality wine, using the BSC methodology it started to communicate very actively with its clients via the website, Facebook, Instagram, Telegram and began to deliver to the client's address. It allowed the management team to get to know their clients better, to learn about their preferences, understand the segment and adjust upcoming plans, objectives, events.

"Sanflo" SRL is a company that develops concepts, organizes and decorates various entertainment events. The company realigned its activities towards manufacturing of light fixtures, night lamps, pictures and other home décor items. It intensified activities related to delivery of goods to home, office and outdoors. In addition, they started communicating with customers via social media: Facebook и Instagram. After studying the customer base, a decision was made to open a showroom for those who need a consultation, and where one could see the whole product range in details.

"Zerododici" SRL is involved in wholesale and retail trade in clothes, footwear, leather goods for children, women and men and it activated functioning of the website and direct marketing.

Not all companies from the studied sample were able to navigate under force majeure circumstances. While analyzing the whole range of organization management system-related problems typical for Moldovan business-organizations, comparative analysis of domestic companies operations and that of organizations from developed countries, makes it possible to draw the following conclusions:

- Functional analysis in business organization management does not have comprehensive understanding of process interaction and does not guarantee sustainable development and operation of the company in the context of rapidly changing reality;
- Administrations of organizations do not maintain systematized management process and it is typical for them not to improve the business-process.
- Lack of comprehensive process vision does not allow making up-to-date decisions in marketing issues, strategic management, incentives for the staff, managing costs and quality.
- Work on complex approach to functioning of all operating spheres of business entities is not being improved sufficiently.
- Enterprise computing needs to be upgraded.
- Due to underestimation of the BSC strategic approach, there are problems with perception of the relevance of this model in future periods. Top managers do not accept implementation of this system. Relevance is not perceived, there is no motivation.
- Substantiation of production parameters, characteristics and technologies requires comprehensive development.

Experience of the implementing the balanced scorecard in functioning of domestic companies allows for speeding up managers' response to changes in the external and internal environment, enhancing flexibility of the enterprise, focusing on analysis and forecasting of the future.

## RECOMMENDATIONS

1. In my opinion, enterprises that function in the Republic of Moldova, in order to achieve efficiency, effectiveness and competitiveness should develop and use the BSC. Application of this system would allow Moldovan companies to ensure their development due to balanced approach to all four elements that are being analyzed in this article.

2. It could make sense for managers and employees of the enterprises studied in the framework of this publication to pay attention to improving financial, marketing components, as well as in-house processes and human resource management.

3. For enterprises "Vinum" SRL, "Zerododici" SRL, "Copperhand" SRL, in the future, in terms of the BSC concept, delivery of goods is relevant due to the existing pandemic-related conditions.

4. Top management of "Sonaris" SRL, "ED-Color" SRL has to understand clearly the importance of such aspects as internal processes, goals, objectives and implementation methods, as well as the aspect of upgrading and training from the point of view of production processes improvement.

5. At enterprises "Montatorul" SRL, "Manchir-auto" SRL, enterprise managers and employees have to differentiate their activities based on utilization of clean auxiliary materials for car maintenance. Organization of these activities should be carried out at these enterprises within the concept of the BSC model.

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## THE WORLD PRACTICE AND CRYPTOCURRENCIES

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**Abstract:** *In recent years, cryptocurrencies have become increasingly present on the public and economic scene. The fact is that many new digital money are being born every day, and that the lives of many of them are too short and they fail to establish themselves as a reliable means of payment. In this regard, in order to maintain, validate and preserve their value, many of them try to link their value with both payment systems and other resources. The aim of this study is to analyze the world practice in the world of cryptocurrencies as a new financial instrument. The world practice in the world of cryptocurrencies and digital technologies shows that the subject of discussions is the status of cryptocurrencies at national and supranational level, as there are many positions of state institutions and the private sector on their status as a means of payment and trade.*

**Keywords:** blockchain, business, digital money, economic, finance, cryptocurrency, world practice of cryptocurrencies,

**JEL CLASSIFICATION:** A10, F15, M21, G23, O16

The use of cryptocurrencies and in particular blockchain technologies can be defined as a challenge to the global economic world, which arises in connection with the imperfection of state and market regulators. In this regard, the following can be cited as reasons:

- cryptocurrencies are a product of the digitalization of the economy;
- the process of creating digital money is associated with algorithms that are based on mathematical laws;
- the control of the spread of digital money is carried out by specially designed cyber system technologies, which aim to increase stability in comparison with the use of intermediaries;
- the use of cryptocurrencies reduces transaction costs.

There are many questions about the viability of digital money worldwide. The answers would be related to proving the practical benefits of using cryptocurrencies. In fact, cryptocurrencies as a means of payment are not secured either by goods or by supranational authorities. The life of different types of digital money is related to the trust of economic agents in them and their desire to integrate them into public life. Although the opportunities for trading and buying and selling with them are limited, a significant part of public attention is focused on them and they play the role of money. According to the author's observations, individuals are interested in digital money trading operations because they limit the intervention of third countries and the state. Following the applicability of cryptocurrencies based on author's research, there is a difference in their use by economic entities, the state and the business sector. The creation of crypto units, according to the author, can also be defined as an advantage as it increases investment and investors willing to participate in business projects.

From a practical point of view, the attitude towards cryptocurrency is positive in some Latin American countries, where there have been economic shocks that have caused the devaluation of national currencies and, as a result, hyperinflation. These countries depend on the export of goods

purchased for US dollars and euros. To reduce the impact of currency appreciation, the governments of these countries have decided to use cryptocurrency as a means of payment. The rapid devaluation of the national currency of Venezuela - the bolivar, provoked an increase in demand for various cryptocurrencies among the population. The most common in this country is Dash. More than 3,000 companies use this altcoin as a means of payment. Venezuela also issues the world's first national cryptocurrency, Petro. With its help, the government plans to obtain funds for oil exports, bypassing US sanctions. In addition to the oil trade, the Venezuelan government is proposing that the cryptocurrency be used within the Bolivarian Alliance of Nations, which includes a dozen countries in Latin America. [1]

Ordinary entrepreneurs and residents of this country use digital currencies to circumvent the constraints of the economy. If the implementation of the government's plans for the use of cryptocurrency passes with varying success, then for the population cryptocurrency is a way out of the complex economic situation. Another Latin American country, Argentina, is a leader in bitcoin trading. [2] The reason is the same as in Venezuela - many years of hyperinflation. It has the fastest growing bitcoin vending machine market in the world. According to forecasts, the number of such devices in the country by the end of 2019 will exceed 2,000, and their introduction, according to the government, will overcome the negative effects of hyperinflation. Following the ban on the use of bank cards to pay fees in the Argentine Uber, this system began to accept bitcoins. In addition, thanks to the Alto Viaje service and the Latin American cryptocurrency Bitex, it is possible to fill in the SUBE card, which is used to pay for public transport. [3]

A special cryptocurrency ApperCoin has been developed for Latin American countries. For payments that use it, it is enough to install a special application on a smartphone. A distinctive feature is the lack of commission and high speed of transactions (average 10 seconds). [4] Some retail companies offer discounts of up to 40% when using this cryptocurrency.

One of the most attractive jurisdictions for companies operating in the field of blockchain, in which there is progressive legislation, friendly regulation of the crypto industry and the tax regime, and a developed banking sector, is Switzerland. Within the canton of Zug, the necessary ecosystem for the blockchain is being formed - „Crypto valley“ (Crypto Valley Association). [5] In general, the legislation in the country is based on the principle of technological neutrality. Cryptocurrencies have no official legal status. They are treated as assets in accordance with the report of the Swiss Federal Council and are accordingly reflected in accounting documents, except for the purposes of applying VAT - they are equal to currencies. The use of cryptocurrencies does not require a license. When performing activities on a commercial basis, compliance with the specified requirements is required. The provisions of the Swiss Penal Code (305bis SCC) are provided for the legalization (laundering) of money obtained in a criminal way through the use of cryptocurrencies. Crypto exchanges must either become members of a self-regulatory organization or obtain a license from a controlled financial intermediary in FINMA (DSFI) before starting operations. In some cases, a bank license may be required (eg storage/management of the client's money). [6]

In February 2018, the Swiss Financial Market Supervisory Authority (FINMA) published recommendations for conducting an ICO, which identified the following types of tokens: payment tokens, user tokens, asset tokens, hybrid tokens. In case the funds raised within the ICO exceed 1 million francs, then it is necessary to obtain a license to raise funds. As a rule, fundraising activities do not fall under the regulation of financial markets if the company has no obligation to return the funds raised, has not issued means of payment and has no secondary market for circulation.

Singapore is also one of the most attractive countries for setting up companies in the field of financial technologies and blockchain. The country is striving to become a "smart" financial center. The third largest ICO market, which features such large cryptocurrencies as the US-based Coinbase, GDAX and Gemini, is the world's largest forum Singapore Fintech Festival. [7] The development of fintech ecosystems is supported by a variety of tools, including an established Fintech and Innovation Group, a fintech laboratory Looking Glass @ MAS and the world's largest crypto hub. [8]

The Monetary Authority of Singapore (MAS) regulates cryptocurrency transactions if they are products covered by the Securities and Futures Act. In this case, the issuers must register the issuance of tokens - securities (prospectus), and intermediaries and organizers of cryptocurrency trading - to obtain the appropriate licenses. At the same time, these requirements do not apply to cryptocurrencies if they do not accept tokens - securities, for trading. The position of the regulator is fixed in the ICO manual. In the event of a breach, the regulator usually issues a warning to the ICO organizer. In response to the warning, some ICO organizers are simply returning funds received from Singapore during the ICO.

The sale and exchange of cryptocurrencies for a specified monetary consideration is recognized as a taxable service. The exchange of cryptocurrencies between them is not regulated and does not fall under the influence of AML procedures, which at the same time does not apply to fiat currency transfer procedures.

One of the most popular offshore jurisdictions with a developed financial services sector is the Cayman Islands. They provide a relatively low cost of starting a business. Cryptocurrencies, including issues of their taxation, are not regulated. ICO's activity is not recognized as an investment in securities, therefore a license from the Cayman Islands Monetary Authority (CIMA) is not required. However, the activities of cryptocurrency investment funds are subject to the Mutual Funds Act, so obtaining a license is necessary. With regard to the use of cryptocurrencies as a means of payment, the Monetary Services Act and the Electronic Transactions Act may apply.

In fact, Gibraltar (British Overseas Territory), often referred to as a „crypto port“, is one of the most attractive countries for cryptocurrency transactions. It hosts such large cryptocurrencies as BTCC, CEX and eToro. The general principle of regulation is the application of existing EU legislation in cases where activities in the field of distributed registers (DLT technologies) go beyond the scope of this area, for example in the exchange of fiat currencies. No special regulation has been introduced due to the fact that the development of regulation for ICO has started, as well as a license for companies in the field of DLT technologies has been presented.

Cryptocurrency transactions are completely banned in Bangladesh, Bolivia, Indonesia, Iceland, Lebanon, Nepal and Ecuador. Banned only for financial institutions are in Vietnam, India, Italy, Iran, China and Lithuania. Cryptocurrency transactions are partially allowed only to intermediaries licensed/registered with the regulator or subject to certain requirements (capital adequacy, introduction of accounting, etc.) in the following countries: UAE (in respect of financial tokens); Bermuda, Cayman Islands (in terms of investment funds); Canada (cryptocurrency exchanges); Cyprus; USA (New York, Washington); Thailand; Japan (cryptocurrency exchanges).

\* \* \*

In a world of globalization and increased use of Internet services, it is quite logical for many economic entities to look for new ways to pay and trade. Cryptocurrencies, as a representative of the blockchain system, are used in many technological systems worldwide. Analyzing the above, it can be concluded that in world practice there is no consensus on the use and applicability of digital money

in the financial and economic system in a global aspect, and there is a long way to establish the benefits of using digital money in public life.

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## INTERNAL CONTROL AND AUDIT - A REQUIREMENT FOR RESPONSIBLE REPORTING OF HIGHER EDUCATION INSTITUTIONS WITH FINANCIAL AUTONOMY

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**Abstract.** *The public sector in our country has lost its credibility in terms of public resource management. A special role in the efficient organization of the management of an entity belongs to the internal control. This article addresses issues that aim to highlight the need to organize internal control and audit of accounting information in Higher Education Institutions with Financial Autonomy for responsible reporting.*

*In this context, the research will show the capacity of public internal audit to contribute to strengthening the management function, efficient and effective risk management and efficient, effective and economical use of public entity resources, to determine the development needs of internal audit from this public sector, to identify the causes underlying the dysfunctions and create the possibilities for elaboration and implementation of a development strategy and last but not least, to ensure more knowledge in the field of research of internal managerial control and public internal audit, at the level of education.*

*The purpose of this approach is to establish the role and importance of public internal control structures within the management system of public entities in education and to improve the credibility of accounting reports.*

**Keywords:** *internal control, internal audit, Internal Control Standards, higher education institutions.*

**JEL CLASSIFICATION:** I 23, M 41, M42.

### INTRODUCTION

In the context in which, lately, the educational system has become the target of public attacks, it becomes increasingly necessary a strict control on the principles of economy, efficiency and effectiveness. In such situation, the solution of improving and more precisely the implementation of public internal control systems, appears as an urgently needed option, representing one of the most current challenges for managers of higher education institutions with financial autonomy (HEIFA).

The need to study the internal control of HEIFA lies in the requirement of a more efficient use of the resources allocated from the state budget, in order to prevent possible dysfunctions that could occur in the activity of these institutions.

**The objective** of the research is to perform the scanning of the good practices at HEIFA level from our country, and by comparison, of those in Romania, regarding the application of the internal managerial control system and the internal audit, in order to achieve a healthy financial management.

In its semantic sense, control represents a "permanent or periodic verification of an activity, a situation, etc., in order to follow its progress and to take measures for improvement" [1, p.231].

At the micro and macro-economic level, control is an efficient and necessary function of management, the control system being an essential tool for management in order to supervise and improve the activity [2, p. 55].

In the foreign literature there are various meanings of this notion, as follows:

- in the French sense "control is a verification, a careful inspection of the correctness of an act" [3].

- in the Anglo-Saxon sense "control is the act of supervising someone, something, a thorough examination or the power to lead as a tool to regulate a mechanism" [4].

In a simpler way, the Romanian author Ionuț-Cosmin Băloi, defines the internal / managerial control system as "simpler or more complex actions by which the manager ensures that the objectives of his organization are met in conditions of efficiency and effectiveness" [5, pp. 10]

After analyzing these meanings, we can define the process of internal managerial control in HEIFA as a set of actions through which managers of different levels ensure the fulfillment of university objectives in terms of efficiency and effectiveness.

## APPLIED RESEARCH METHODS

At the basis of the elaboration of this article, is the investigation of the theoretical sources, which approach the internal managerial control system and the internal audit, as well as of the legislation in force regarding the internal control in the public institutions.

The research methodology was based on the analysis of the functioning of the internal control system in public institutions, and by applying the explanation and reasoning, it was proceeded to argue the need for its implementation in HEIFA.

## THE RESULTS OBTAINED

The definition of the concept of internal control was based on several concepts of internationally recognized profile bodies, which we present below:

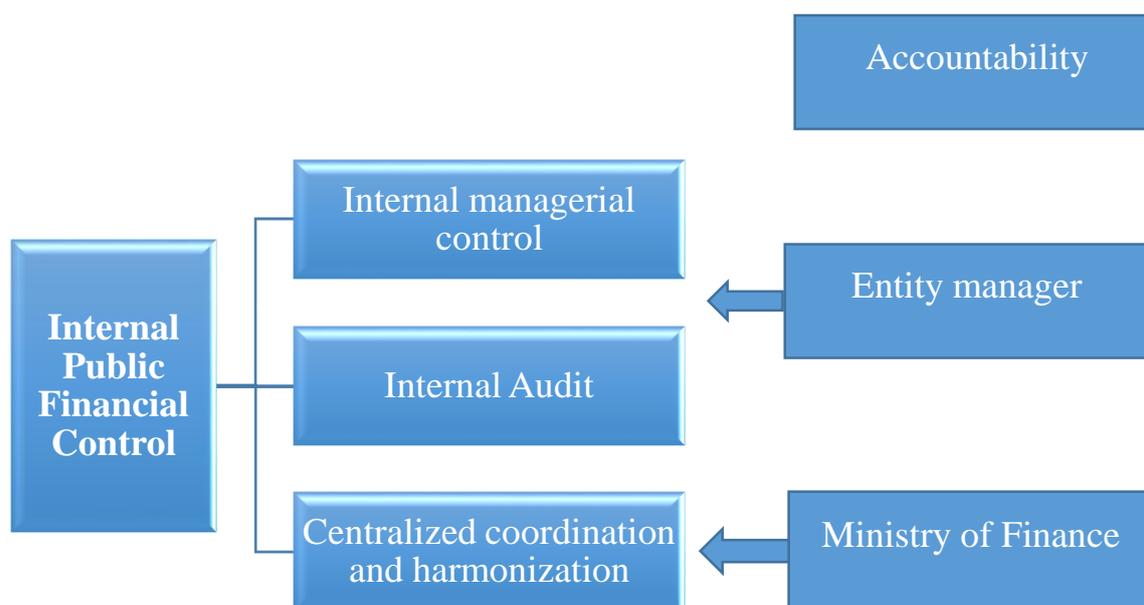
- **INTOSAI: Internal control** is a managerial tool used to provide reasonable assurance that management objectives are met [6];

- **Committee of Treadway Commission Sponsoring Organizations (USA) - COSO: Internal control** is a process implemented by the organization's management, which intends to provide reasonable assurance on the achievement of objectives grouped into the following categories: effectiveness and efficiency of operation; reliability of financial information; compliance with laws and regulations [7].

- **Canadian Institute of Certified Accountants (Criteria of Control) - CoCo: Internal control** is the set of elements of an organization (including resources, systems, processes, culture, structure and tasks) that collectively help people achieve the organization's goals, grouped into three broad categories: effectiveness and efficiency of operation; reliability of internal and external information; compliance with internal laws, regulations and policies [7].

According to the Law on public internal financial control no 229 of September 23, 2010, public internal financial control is a general and consolidated system established in the public sector, consisting of managerial internal control, internal audit and its centralized harmonization, aiming to promote the management of public entities according to the principles of good governance [9, art. 3]

In order to promote a good governance of a public entity, according to art. 5 of the Law on public internal financial control, public internal financial control includes:



**Figure 1. Components of Public Internal Financial Control**

*Source: developed by the author based on the Law on public internal financial control no. 229 din September 23, 2010*

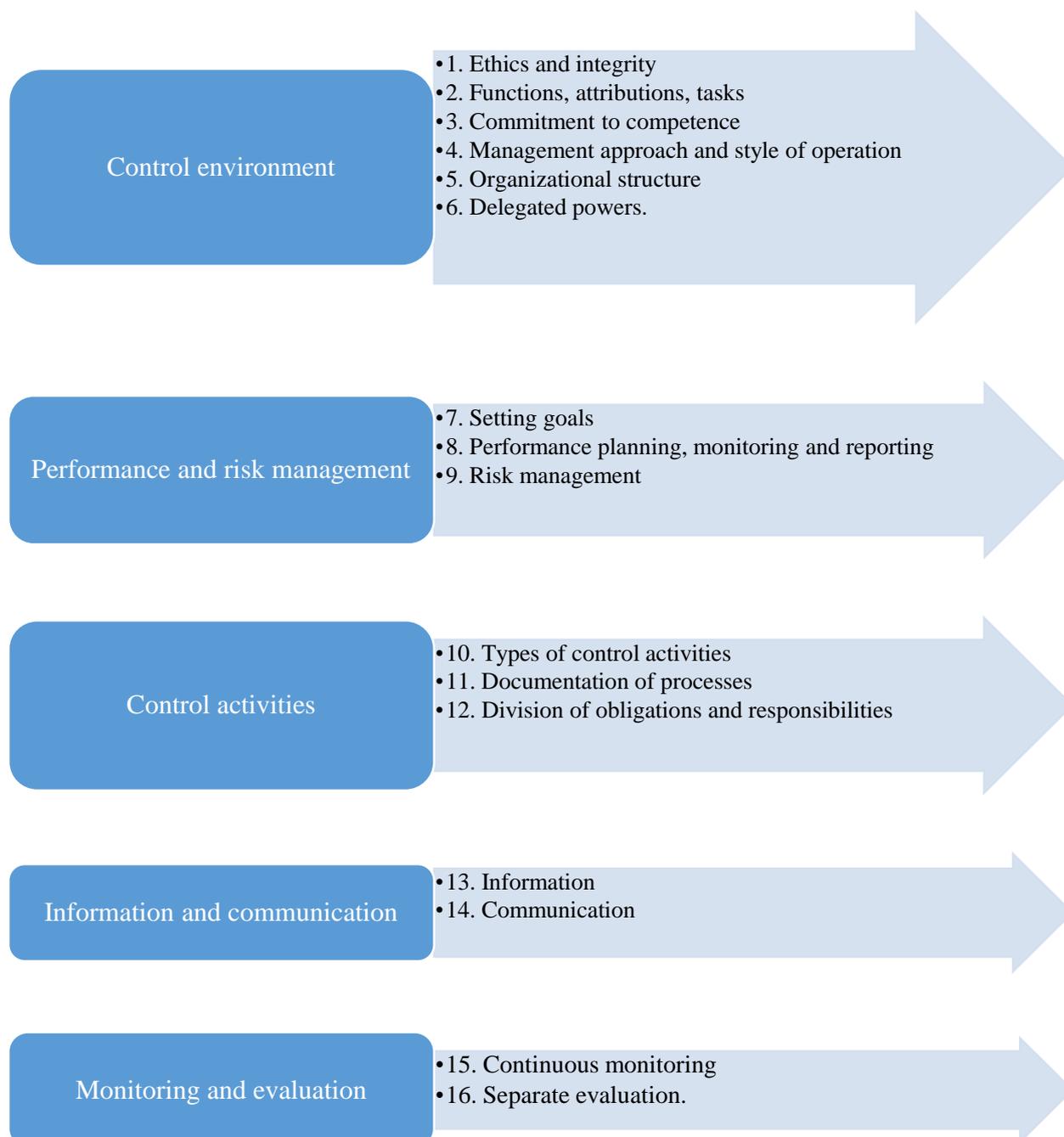
**Internal managerial control** is "a system organized by the manager of the public entity and its staff in order to ensure good governance, which includes all policies, procedures, internal rules, processes and activities carried out within the public entity to manage risks and provide reasonable assurance on achieving the planned objectives and results "[9, art. 3].

Internal audit is an independent and objective activity of assurance and advice, designed to add value and improve the activity of a public entity. The internal audit helps the public entity in fulfilling its objectives through a systematic and methodical approach, evaluating and improving the effectiveness of the risk management, control and governance processes [9, art. 3].

The responsibility for the centralized coordination and harmonization of the public internal financial control belongs to the Ministry of Finance by exercising the following duties [9, art. 29]:

- elaborates, promotes and monitors the policies in the field of public internal financial control;
- monitors and evaluates the quality of the internal audit activity, regardless of the form of its organization;
- monitors and evaluates the quality of the internal managerial control system;
- elaborates and develops the certification mechanisms of the internal auditors;
- collaborates with international bodies and specialized institutions in the field of public internal financial control.

In order to implement the mentioned law, the Ministry of Finance, by Order no. 189 of November 05, 2015, approved the National Standards for Internal Control in the Public Sector (NSIC) [10]. They are applicable to all public sector entities that manage the means of the national public budget. The 16 NSIC appear as a reference system in the field, defining a minimum set of management rules, grouped around five pillars - components of control (Fig. 2)



**Figure 2. NSIC structure in the public sector**

*Source: prepared by the author based on the Order of the Ministry of Finance no. 189 of November 05, 2015 regarding the approval of the National Standards of Internal Control in the Public Sector.*

For a better understanding, we will proceed to the description and explanation of these standards, by adapting to the particularities of HEIFA.

## **I. Control environment**

### **NSIC 1. Ethics and integrity**

- university managers, but also the teaching and auxiliary staff must have an appropriate level of professional and personal integrity, to show an ethical behavior in the activity they carry out;
- university managers ensure that all employees of an HEIFA are familiar with the regulations on the prevention of fraud and corruption, the reporting of fraud and irregularities;
- special emphasis is placed on the power of the example of leaders (rector, vice-rectors, deans, heads of departments, etc.) in promoting values at the university level.

### **NSIC 2. Functions, duties and tasks**

- in order to ensure the success of the university's mission, staff must know their duties and role (through the job description) and act towards achieving the objectives;
- university management must support staff in carrying out tasks

### **NSIC 3. Commitment to competence**

- within the university, positions are assigned only to competent persons, who have the necessary skills and experience to perform their tasks efficiently;
- the competencies and tasks of the teaching and administrative staff must be in constant balance and performance must be assessed regularly.

### **NSIC 4. Management approach and style of operation**

- management staff (rector, vice-rectors, deans, heads of departments, etc.) must recognize the responsibility for implementing effective internal control systems.

### **NSIC 5. Organizational structure**

- HEIFA establishes its organizational chart and defines the responsibilities and attributions of each subdivision, informing the staff in writing.

### **NSIC 6. Delegated powers**

- university managers are responsible for delegating the powers to employees who have the knowledge, experience and ability necessary to perform the delegated tasks..

## **II. Performance and Risk Management**

### **NSIC 7. Setting objectives**

- the university managers, but also the teaching staff must establish the strategic objectives of the institution in accordance with the assumed mission;
- the general objectives must be translated into operational objectives, and the operational ones - into individual objectives, and must be communicated to the staff on the principle according to which the responsibility for achieving the goals falls on both the university managers and each employee.

### **NSIC 8. Performance planning, monitoring and reporting**

- planning is seen as an essential function of university management, which consists in adjusting strategic and operational objectives to available resources by drawing up an action plan, setting realistic deadlines;
- the aim is to use numerical and qualitative indicators to assess the economy, efficiency and effectiveness of the steps taken towards achieving the objectives set;
- In any HEIFA, the Rector is responsible for the timely submission of summary reports on the situation of the patrimony and the budget execution.

### **NSIC 9. Risk management**

- HEIFA must analyze periodically (at least annually), the risks related to the activities carried out and draw up plans to limit the potential consequences.

## **III. Control activities**

### **NSIC 10. Types of control activities**

- Within the HEIFA it is necessary to organize control activities for all processes, especially for economic activities (organization and management of accounting, elaboration and approval of the budget of revenues and expenditures, circulation of documents, activity of organization and operation of the cashier, etc.).

### **NSIC 11. Process documentation**

- HEIFA draws up graphic and / or narrative descriptions of the basic processes to identify the most efficient way to manage risks;
- process documentation ensures the continuity of the activity of an educational institution, regardless of the staff flow.

### **NSIC 12. Division of obligations and responsibilities**

- the manager of an HEIFA must ensure that the functions with responsibility in the exercise of certain tasks and in verifying the validity and correctness of the performance of that task are separated, thus reducing the risk of error, fraud or breach.

#### **IV. Information and communication**

##### **NSIC 13. Information**

- the information is seen as an absolutely necessary element for an operative and efficient monitoring of the processes that take place within a public higher education institution;
- the information provided by the ÎISAF to internal and external users must be.

##### **NSIC 14. Communication**

- the communication system within the institution must facilitate the timely dissemination of information both inside and outside the university.
- effective communication within the university must be achieved both horizontally and vertically, from top to bottom and vice versa.

#### **V. Monitoring and evaluation**

##### **Continuous monitoring**

- aims at the supervision by managers of control activities and the extent to which they reduce the identified risks.

##### **Separate evaluation**

- HEIFA managers must periodically evaluate the effectiveness of the internal control system, and possible malfunctions - mitigated.
- objective and independent evaluation of the internal control system within an HEIFA by the internal audit activity.

In any higher education institution, the first person responsible for the internal managerial control is the rector, who has the obligation to order the necessary measures in order to implement or develop this system and implicitly the specific procedures. Thus, the role of this control structure is a review and consultation activity available to the HEIFA management. The structure and the way of organizing the internal managerial control system will be established depending on the volume and complexity of the activities within each university.

At HEIFA level, the internal managerial control proves its usefulness in generating opportunities to capitalize on accounting information and ensuring the usefulness of information for management by following:

- application of the decisions adopted by the managers;
- budget execution;
- supervision of receipts and payments;
- the adequacy of the allocation of resources in accordance with the established objectives;
- efficient use of resources;
- increasing the responsibility of decision makers in engaging and conducting transactions;
- prevention of non-compliant accounting practices;
- avoiding excessive expenses or overestimating them;
- etc.

Usually, however, in the organization and exercise of internal managerial control, a number of limits may appear, which may have a negative impact on the certification and capitalization of accounting information. Among the possible limits of internal managerial control, we can mention:

ethics and professional integrity, the professionalism of those involved, the risk of undetection, inadequate procedures, associated costs, etc.

From this perspective, the role of internal audit intervenes. The internal audit took root in the public sector institutions due to the deficiencies of the internal control. *The purpose of the internal audit is to provide consultancy and provide objective assurance on the effectiveness of the internal management control system, providing recommendations for its improvement and contributing to improving the activity of the public entity [9, art. 7].*

The level of development of internal managerial control systems and public internal audit in HEIFA from our country is not remarkable, on the contrary, many institutions do not understand the real utility of the system and the set of associated standards.

Studying the HEIFA organizational charts from the country, out of a total of 18 institutions, only in 3 of them we can observe the internal audit office / department (TUM, SUPES and SUMP). An internal public audit report can only be found on the USMF website. In private discussions with employees of the financial-accounting departments of some HEIFA it was communicated that at the moment, in the universities of our country is not organized internal management control system and practically no public internal audit, which indicates that managers are not aware of the real usefulness of development and use of control standards gear.

However, according to the provisions of the Education Code of the Republic of Moldova no. 152 from July 17, 2014, the system of management bodies of a higher education institution also includes the Council for institutional strategic development [11, art. 104]. The tasks of this Council include the monitoring and evaluation of the efficiency of the use of the financial resources of the educational institution. The Council must include economists and lawyers, and the person appointed by the Ministry of Finance must have specific powers for financial monitoring and auditing. However, we believe that, in the structure of a modern university, internal audit must become an essential function, having the responsibility to provide assurance on the functioning of the institution as a whole.

In order to ensure the requirement of independence and objectivity imposed by the legislation in force [9, art. 18], and in order to avoid the involvement of the staff in carrying out the activities they audit, it is recommended to set up the Internal Audit Department (IAD) under the direct subordination of the rector. Thus, IAD must have sufficient authority to enable it to carry out its functions effectively, so as not to restrict its scope, giving it adequate objectivity in formulating recommendations.

The internal audit unit is responsible for ensuring and consulting, by evaluating the effectiveness of the financial management and internal control system of the entity and offering recommendations for its improvement. By providing consulting and assurance services, the role of internal audit is to assist management in assessing and improving the processes of governance, control and risk management, designed to ensure the achievement of the institution's objectives and adequate risk management.

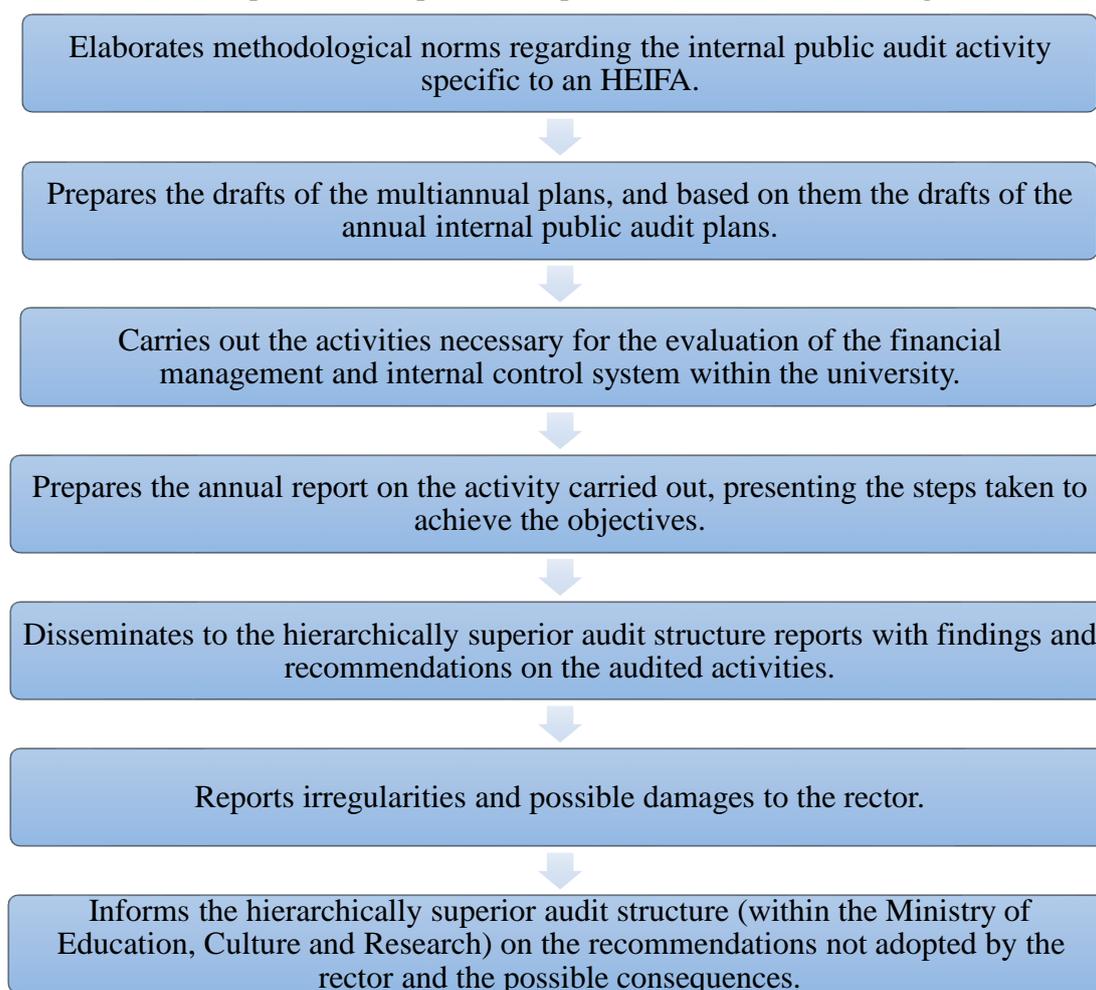
Thus, through the actions carried out, the internal audit contributes to the certification of the accounting information by:

- assessment of the degree of application and adequacy of internal control in the financial-accounting field;
- verification of conformity of records;
- prevention of accounting frauds;
- ensuring the credibility of accounting information;

- identifying and minimizing the risks of accounting error;
- evaluating the degree of opportunity, compliance, economy, effectiveness and efficiency of the operations recorded in the accounting;
- monitoring the entire management system, etc.

The sizing of the public internal audit department will be done depending on the volume of activity and the size of the associated risks so as to ensure the audit of all activities carried out within the educational institution.

Next we come with the proposal of a set of actions regarding the organization of the activity of the public internal audit department adapted to the particularities of HEIFA (Fig. 3):



**Figure 3. Duties of the public audit department of HEIFA**

*Source: prepared by the author*

In our opinion, the internal public audit structure is an independent one through its freedom to act in order to evaluate all activities carried out by the university, using specific techniques in accordance with the audit rules, so that in the end it can issue objective recommendations, but without the authority to enforce their application and enforcement.

## CONCLUSIONS

Taking into account the above, we consider that the internal managerial control and the internal audit is a functional tool that would allow the management of the higher education institution to receive, from an alternative internal source, assurances according to which the processes within the university are carried out in a way the probability of fraud, error or inefficient and uneconomic activity is minimized. Thus, the internal public audit department must fulfill the role of advisory body, encouraging the improvement of processes and operations within the educational institution. Basically, the internal managerial control structure and the internal audit structure have the role of helping the university management in fulfilling the assumed obligations, in the sense of directing the institution towards achieving the assumed objectives.

In addition, we believe that the organization of internal managerial control and internal audit by HEIFA, would contribute to accountability in the provision of accounting information and would increase the degree of trust of users.

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## MOLDOVAN BANKING EFFICIENCY

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**Abstract.** Banking activity as a whole is the link between depositors and borrowers, aiming the provision of key services to facilitate consumption and promote economic growth. Thus, banking regulation and risk oversight are vital aspects of the efficient and sustainable functioning of the economy. Providing bank loans to the real economy and facilitating capital market activity represent the key for developing a sustainable economy and an internationally competitive banking system. Deriving from the key role the bank credit has for the functioning of the real economy, is imperative to analyze how ongoing structural changes in banks have affected their ability to fulfill the core function in intermediating loans. The banking sector as a whole in the medium severity scenario shows a strong resilience, all banks registering sufficient own funds rate. However, credit risk continues to pose the most significant threat to the stability of the banking sector, highlighting the importance of maintaining sufficient capital rate to absorb estimated losses even in the most pessimistic scenarios. Banking performance aims first of all to determine the bank's soundness, its degree of exposure to various risk categories and then its level of efficiency.

**Keywords:** economy, banking system, efficiency of banking activity, profit, regulations.

**JEL CLASSIFICATION:** G20, G21

### INTRODUCTION

The analysis of international experience assumes that the economic growth of a state is based on a well-developed banking system, oriented towards intensive risk-based supervision, assessment of macroeconomic factors as well as assessment of the impact it has on the risks to which financial institutions are subject to. The banking activity in the Republic of Moldova under the impact of community values and regulations is a very important topic in establishing relations between the National Bank of Moldova and the activity of commercial banks, which aims to ensure the proper functioning of the domestic financial system based on a strong and competitive banking sector, oriented towards market relations and risk prevention. The banking supervision and regulation mechanism is established according to a series of specific requirements, stipulated in normative acts and adapted to the Community values and regulations, in particular adjustment to the best practices and recommendations of the Basel Committee on Banking Supervision and European Union Directives. Providing bank loans to the real economy and facilitating capital market activity are imperative for developing a sustainable economy and ensuring an internationally competitive banking system.

The purpose of the research arises from the need to analyze the efficiency of banks in terms of lending to the real sector and the role on the capital market. The ultimate goal is to maximize profit under regulatory conditions both at the micro prudential level (individual for banks) and at macro prudential (banking system as a whole). The exposed topic is of utmost importance because the achievement of the bank's objectives, namely the basic objective of maximizing profit, has a direct impact on the sustainable development of the economy of the Republic of Moldova as well as ensuring the international competitiveness of the domestic banking system. The topicality of the

research consists in analyzing the efficiency of the banking sector by focusing particularly on aspects as profitability, solvency, capital adequacy, liquidity, implementation of Basel III framework, and whether these indicators encourage the lending activity to the real economy and anticipate the future inflationary risks.

## **THE CONCEPTUAL FRAMEWORK**

"Banking as a whole represents the link between depositors and borrowers, as well as the provision of key services to facilitate consumption and promote economic growth, thus risk surveillance and regulation of the banking sector is vital for the efficient and sustainable functioning of the economy"<sup>1</sup>.

So, "banking activity means the organizing and conducting the banking operations, bank records and banking control in accordance with the strategies and management of banks and ensuring the role of intermediation between those who have capital and entrepreneurs".<sup>2</sup>

Performance can be defined as the measurable level of stability of a bank's activity, characterized by low levels of any kind of risk and a normal trend of increasing profits from one analysis period to another.<sup>3</sup>

A bank with a high return and a major financial result creates an image among the depositors of a safe and stable bank, thus obtaining the highest possible performance lead to the creation of a stable financial-banking system.

## **RESEARCH METHODS**

In order to achieve the objectives, the author aimed to develop a research methodology, applying the most varied methods, so that the phenomenon of analyzing banking efficiency in the Republic of Moldova in terms of providing bank loans to the real economy and the role of banks in facilitating capital market to be explored as well as possible. Thus, the research will be oriented on two directions: theoretical and applied. The theoretical direction aims at examining the theories regarding the concept of efficiency of the banking activity. The application direction aims at analyzing the evolution of credit indicators, as well as analyzing the applied macro prudential instruments.

In this sense, the following methods will be used: analysis and synthesis. The analysis will be used during the research, for examination of the banking regulatory framework both at the community and national level, while, with the help of the synthesis, the information will be exposed in systematized and coherent way, by generalizing the sources of literature and the normative-legal basis, and expressing at the same time the author point of view on the analyzed phenomenon. Induction and deduction are two other methods that will be used for this economic research, as induction involves the transition from the particular to the general, while deduction implies the opposite. The method of content analysis involves structuring the research into three chronological poles: pre-analysis, material exploitation, processing and interpretation of results.

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<sup>1</sup> BASNO, Cezar, DARDAC, Nicolae. Managementul bancar. București: Editura Economică, 2002. 272 p. ISBN 973-590-702-X.

<sup>2</sup> Căpraru, Bogdan (2010), Activitatea bancară – sisteme, operațiuni și practice, Editura C.H. Beck, Iași, 368 p. ISBN 978-606-18-0319-4

<sup>3</sup> I.Bătrâncea, I.Trenca, A.Bejenaru, S.N.Borlea – Analiza performanțelor și riscurilor bancare, Editura Risoprint, Cluj-Napoca, 2008, p.374

## **RESEARCH RESULTS AND DISCUSSIONS**

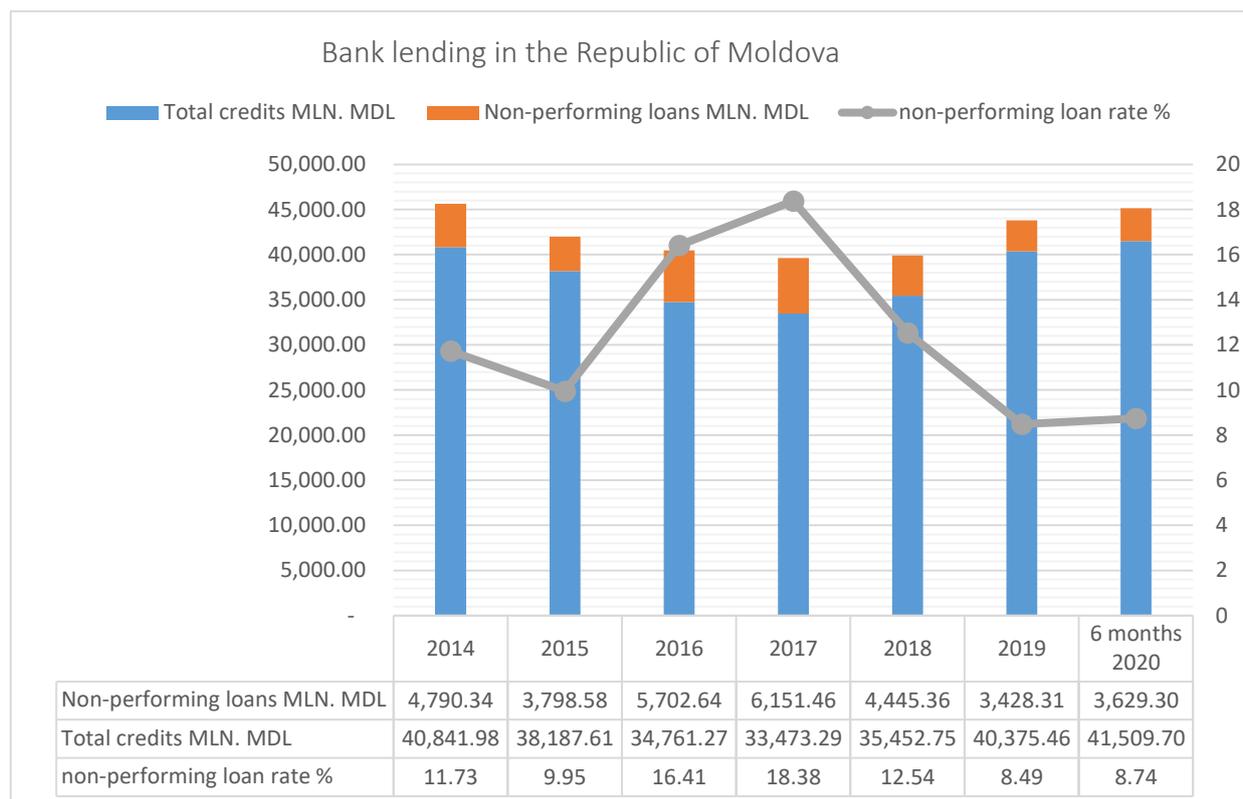
The efficiency of the banking activity in the Republic of Moldova implies the analysis of the impact of structural changes in the banking sector on the provision of financial intermediation services at a high level. The analysis focuses on bank credit and then on the provision of services related to the capital market - namely banking and trading investments. Given the key role of bank credit for the functioning of the real economy, this section examines how ongoing structural changes in banks have affected their ability to perform the core function in intermediating loans. It first covers general trends in the provision of bank loans. The role of supply factors (tightening or weakening credit standards) in shaping these trends and the determinants of these changes in credit supply will then be discussed.

The analysis of global bank credit developments shows a deterioration in lending standards, some lending structures have involved a high leverage on the assumption that asset valuations will continue to rise, while a substantial portion of lending has been directed to borrowers with a relatively weak repayment capacity (real estate developers, etc.). Bank lending trends have varied around the world during the current crisis. The growth of bank lending to the non-financial private sector has only suffered a temporary respite in advanced economies that have not been substantially affected by the crisis.

The importance of the crisis and the post-crisis adjustment in the bank balance sheets for general lending and the bank's performance show that the economies that increase credit activity during crisis and pre-crisis times and a large stock of non-performing loans as a result of the crisis recorded substantial credit declines.

In 2019, bank lending returned to an upward trend after a period of four consecutive years of decline and a slight revival in 2018. In the first half of 2020 the volume of granted loans exceeds the volume recorder for the whole 2019. The total balance of loans increased by 13.9 percent. The balance of non-performing loans registered a significant decrease of 22.9%, the rate of non-performing loans constituting 8.49% at the end of 2019 and of 8.74% for the first 6 months of 2020.

The total gross loan portfolio of banks in the Republic of Moldova increased during 2019 (Figure 1) by about 4.9 billion MDL (13.9%), at the end of the period, the total balance amounted to 40.4 billion MDL (2018: 35.5 billion MDL). For 2020, the total balance of loans represents a significant increase in the first 6 months of the year, exceeding the total balance for 2019 by 1.1 billion MDL. At the same time, the stock of non-performing loans decreased by 22.9% (1.0 billion MDL), which determined the decrease of the non-performing loans rate in the total portfolio to 8.49 percent.



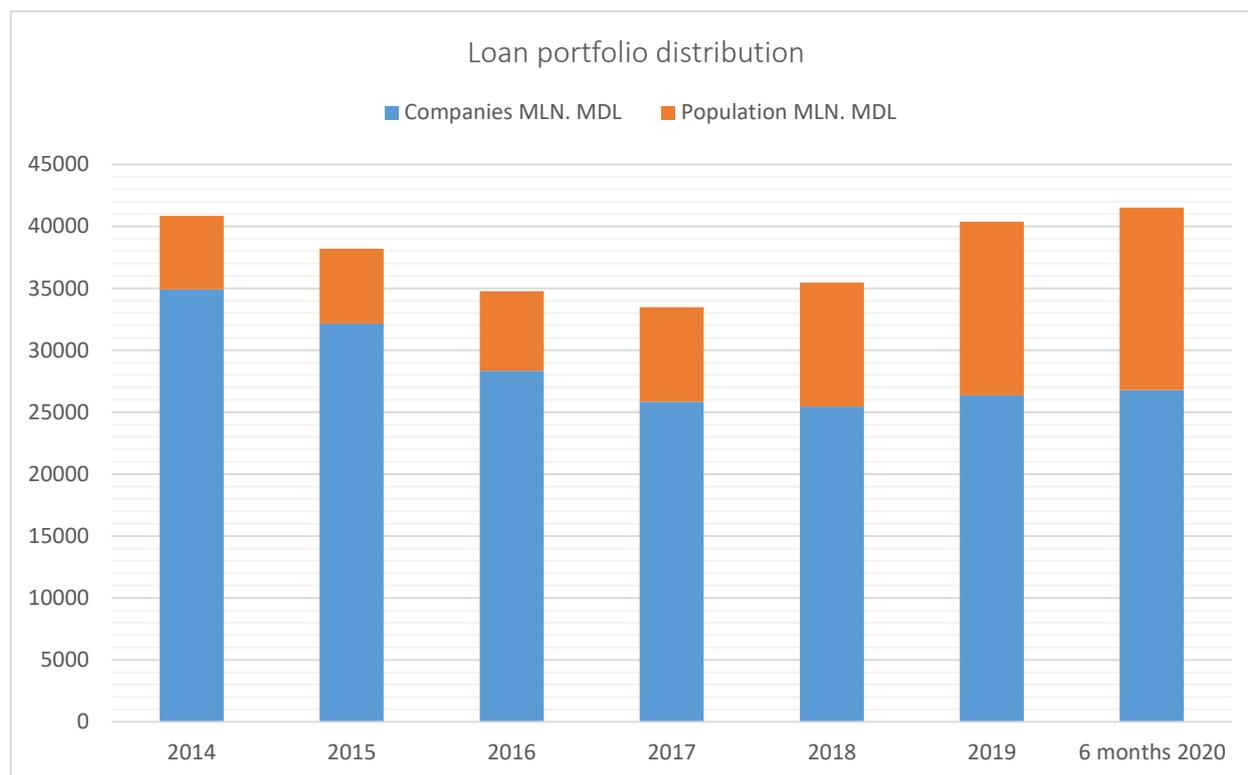
**Figure 1. The performance of the national banking system in the period 2014-2020\*<sup>4</sup>**

*Source:* Created by the author based on data from the National Bank of Moldova

Analyzing the volume of loans granted in 2019, it can be observed that the increase of 13.9% as compared to 2018 was determined to a greater extent by the loans granted to the population (+ 4018.3 million MDL) (Figure 2), while the loans granted to companies recorded a more moderate increase (+ 904.4 million MDL). Thus, the increase of loans granted to the population in 2019 was 40.2% compared to 2018. The data for the first 6 months of 2020 show a volume approximately equal to that of 2019, so if the growth rate of loans to the population will be maintained until the end of the year, then their growth will be about 2 times higher than in 2019.

During the period under review, banks continued to focus their efforts to expand their credit portfolio to the population sector. Competitive pressure and lower risk profile of borrowers – individuals have led to an increase in the supply of loans for this segment, while increasing demand from borrowers is mainly explained by the need for financial sources.

<sup>4</sup> \*- the data are for 6 months of 2020



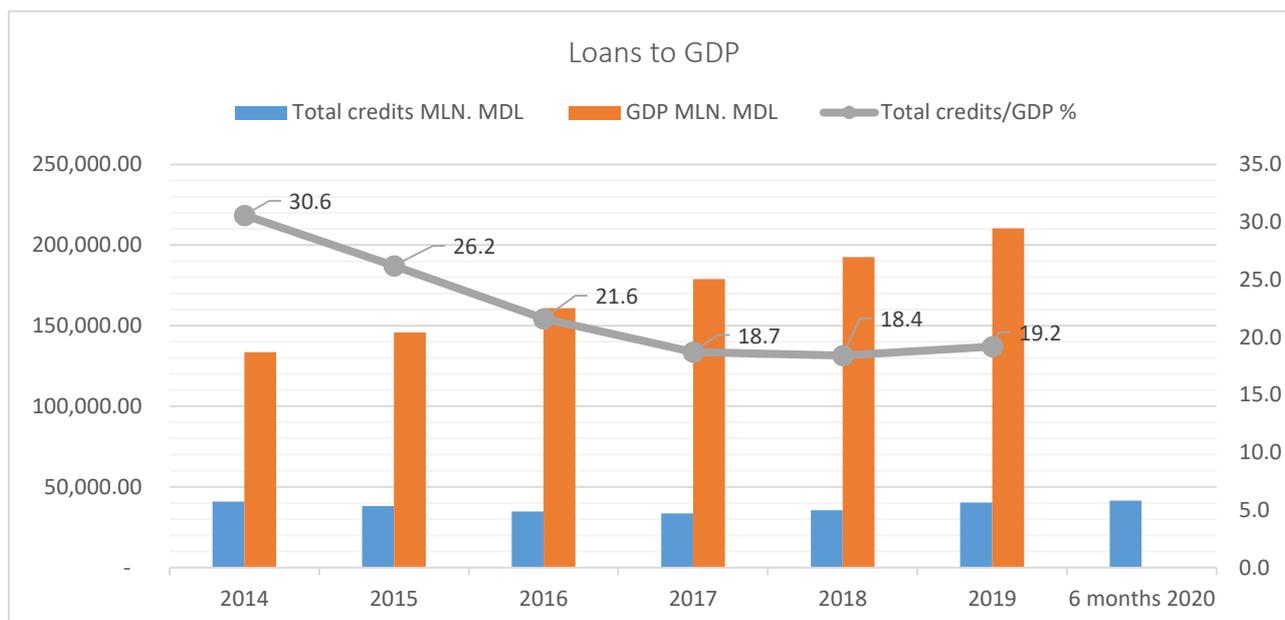
**Figure 2. Loan portfolio distribution**

*Source:* Created by the author based on data from the National Bank of Moldova

The currency structure of loans granted is characterized by the sharp increase in loans in national currency (+ 23.4%) in 2019 compared to 2018. Thus in 2019 the majority share of loans was held by the national currency in the amount of 66.7 at percent, 24.2 percent by the euro and 9.1 percent by the US dollar. For the first half of 2020, the currency structure of loans granted remains similar to that of 2019 with a share of loans in MDL of 68.9 percent.

The gross balance of loans granted to individuals and legal entities in 2019 and the 6 months of 2020 recorded the largest increases in the last 5 years. This growth was stimulated both by the supply factors (easing standards and lowering interest rates) and also by the demand factors (increasing the need to finance business and population). At the same time, the persistence of competition both between banks and with non-bank credit organizations favors the relaxation of lending conditions for consumers, thus having a stimulating effect on lending.

Bank lending as a share in GDP (Figure 3) accounted for 19.2% in 2019, decreasing in the last 5 years, for example in 2014 the a share of the gross balance of bank loans in GDP represented 30.6%.



**Figure 3. Loans to GDP**

*Source:* Created by the author based on data from the National Bank of Moldova

The heterogeneity of lending conditions between banks and countries reflects the incidence of various cyclical and structural factors. Macroeconomic uncertainty may be to the detriment of credit growth, as banks are less willing to finance projects when their yields are volatile and less predictable. Alessandri and Bottero (2017) found that an increase in aggregate uncertainty has reduced the credit approval rate of Italian banks, but the negative impact on credit supply is lower for better-capitalized banks with higher liquidity buffers.

The results of the simulations reveal that the banking sector as a whole in the medium severity scenario shows a solid resilience, all banks registering a rate of own funds over 10.0 percent. However, credit risk continues to pose the most significant threat to the stability of the banking sector, highlighting the importance of maintaining sufficient capital buffers to absorb estimated losses even in the most pessimistic scenarios of deteriorating asset quality.

A large stock of non-performing loans can also impede the provision of credit. Banks with high non-performing loan rates in the post-crisis period tended to reduce their lending, especially in some banks in the area. Bank-level data indicate that depreciation has mechanically influenced loan growth, but not to a large extent - on average, net depreciation has reduced the average annual loan growth. The mechanisms by which non-performing loans have a negative impact on the supply of bank loans are probably more indirect: non-performing loans bank capital and distract management from new opportunities, such as stimulating low-capitalized banks to postpone the recognition of problem loans through "ever greening".

Banks' capital market businesses can be divided into two broad categories: banking and trading. Investment banking refers to activities from which banks earn revenue from capital raising fees for clients in the debt and equity markets and procurement advisory services. This line of business requires low direct capital and tends to generate high, albeit volatile, returns on equity. Investment banking remained a strategic goal of large global banks in the post-crisis period, and their business units did not change significantly from pre-crisis years, apart from cost reductions. Global activity, measured by the volumes of transactions and commissions, has sometimes approached crisis highs.

Global revenue market shares did not change substantially in the post-crisis period, although the top five European banks (all G-SIBs) ceded some to non-US banks.

The second, even larger, area of activity and income on the banking capital market includes various commercial enterprises, broadly grouped into equity and fixed income, foreign exchange and commodities (FICC). In the boom years before the crisis, many banks have substantially expanded their trading activity, with the largest banks in the US and Europe increasing in particular the scope, complexity and geographical coverage of their activities, often by acquiring independent dealers. Some major US banks have also adapted their strategies and business models to business trading during the crisis, by acquiring unsuccessful institutions. Meanwhile, moving in the other direction, some commercial companies have changed their legal structure to become banking holding companies. Following the crisis, the operational adjustments of banks' business were expanded even more sharply than for investment banks and other banking lines of business, as flat revenues, rapidly evolving technology and stricter regulation pressed banks' business units. Banks also reversed the surpluses accumulated in the pre-crisis boom, when assets and trading risk were increasingly deposited in bank balance sheets to facilitate market creation or securitization, or to support proprietary trading.

## **CONCLUSIONS**

The analysis of the efficiency of the Moldovan banking system demonstrates satisfactory financial performance, banks maintaining solid positions of profitability and solvency. Banks register a favorable level of liquidity, and the liquidity surplus in the banking sector did not increase significantly due to the activation of channeling liquid assets to lending, thus, 2019 representing the year of the return of banking intermediation to positive trends.

In the domestic financial sector, the level of systemic financial risk is considered to be low. This is due to the slow recovery of lending activity, which shows no signs of overheating. On the other hand, 2019 can be characterized as a transitional period in terms of accounting and prudential requirements, with an impact on the financial results of banks. In this context, some non-cyclical macro-prudential instruments have been applied. For 2020, it is characterized by a dizzying increase in the opening of the lending sector to the real economy, which requires banks to create and maintain sufficient capital buffers to absorb estimated losses even in the most pessimistic scenarios of deteriorating asset quality. To ensure greater efficiency of the banking system, the regulator uses the following instruments to ensure the stability of the banking business, namely: (1) the capital buffer, (2) the countercyclical capital buffer, (3) the systemic risk buffer, (4) the shock absorber of the systemically important company.

Banking performance aims first of all to determine the bank's soundness, its degree of exposure to various risk categories and then its level of efficiency. A positive and maximum result expected by the bank starts from the considerations of financial diagnosis on the banking activity which is divided into two directions: the diagnosis of profitability (return on equity, economic profitability); and risk diagnosis (exploitation risk, financial risk, bankruptcy risk).

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## THE IMPORTANCE OF THE SUPPLY CHAIN NETWORK AS A PART OF THE MARKET

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**Abstract.** *A supply chain is the network of those involved with the production and distribution of a company's products. Supply chains involve a multitude of activities, people, entities, information and resources. They incorporate many steps and processes used to deliver products or services to the marketplace. Examples include refining raw materials, manufacturing, transportation, inventory control, finance, retailing, packaging and marketing. Supply chain management is the vital process of planning, tracking and perfecting how goods move throughout the system. Maintaining strong links within your supply chain impacts business costs and profitability.*

**Keywords:** *Logistics Management, Supply Chain Network, Competitive Advantage*

### JEL CLASSIFICATION: M13, P4, N70

Logistics is unique: it never stops! Logistics is happening around the globe, twenty-four hours of every day, seven days a week fifty-two weeks a year. Logistics is concerned with getting products and services where they are needed when they are desired. Most consumers in highly development countries take a high level of competency for granted. When they go to the store, they expect products to be available and fresh. It is very difficult to accomplish any marketing or manufacturing without logistical support. Logistics involves the integration of information, transportation, inventory, warehousing, material handling and packaging. All these areas of work provide a variety of stimulating jobs. These jobs combine to make overall logistics management a challenging and rewarding career. Because of the strategic importance of logistics performance, many successful logistics executives have been promoted to senior management.

The operating responsibility of logistics is the geographical positioning of the raw materials, work-in-process, and finished inventories where they are required at the lowest possible cost. It is through the logistics process that materials flow into the vast manufacturing capacity of an industrial nation and products are distributed through marketing channels to consumers.

Logistics adds value when inventory is correctly positioned to facilitate sale. Creating logistics value is costly. For individual firms, logistics expenditures typically range from 5 to 35 percent of sales depending on the type of business, geographical area of operation, and weight/ value ration of products and materials [1, p.15]. Logistics typically accounts for one of the highest cost of doing business, second only to materials in manufacturing or cost of goods sold in wholesaling or retailing. It is clear that logistics, while vital to business success, is expensive.

Despite these impressive cost comparisons, the true excitement of logistics is not cost containment or reduction. The excitement comes from understanding how select firms position their logistical competency to gain competitive advantage. Firms that enjoy world-class logistical competency can gain competitive advantage by providing customers with superior service. While

perfect orders are difficult to achieve, logistically sophisticated firms seek such lofty performance and are committed to continuous improvement. Leading firms typically have information systems capable of monitoring logistics performance on a real-time basis, giving them the capability to identify potential operation problems and take corrective actions prior to customer service failure. From a personal experience, I can say that through logistics, companies even if they are small, can create a competitive advantage and be a reliable partner of other international ones.

Logistical management used to be known as "physical distribution management" and now, in the more forward-thinking companies is developing into "supply chain management".

Logistics renaissance: prior to 1950, no formal concept or theory of integrated logistics existed. The three major factors that lead to neglect logistics area:

1. Computers: before computers, there was no reason to think that logistics functions could improve overall performance. Computer applications focused on improving performance regarding order processing, forecasting, inventory and transport control.
2. Economic situation: the pressure for profit improvement that began in the 1950.
3. Cost of inventory: the difficulty of identifying the true cost of inventory according to general accounting procedure lead experts to shift to logistics procedure to place a financial return on reducing inventory.
4. Influence of the military experience: before business in general showed much interest in administering logistics activities in a coordinated manner, the military was organized to carry out logistics activities. More than a decade before the beginning of the developmental period of logistics, the military carried out what was called the most complex, best planned logistics operation in history – the invasion of Europe during World War II.

These basic factors, along with the natural resistance to change plus the mentality of "Don't fix it if it isn't breaking" blocked the early logistics success. But because of little outstanding success stories the concept of logistics survived [4, pp.10-17].

#### *Importance and Influence of Logistics*

Now that we have an idea about what Logistics is, let's examine the importance of this science and its influence in the market economy.

Competitive advantage. A major theme of this research is that effective logistics management can provide a major source of competitive advantage – in other words a position of enduring superiority over competitors in terms of customer preference may be achieved through logistics. The bases for success in the marketplace are numerous, but a simple model is based around the triangular linkage of the company, its customers and its competitors – the Three C's. The „Three C's" in question are: the customers, the competitor and the company.

The source of competitive advantage is found firstly in the ability of the organization to differentiate itself, in the eyes of the customer, from its competition and secondly by operating at a lower cost hence at greater profit. Seeking a sustainable and defensible competitive advantage has become the concern of every manager who is alert to the realities of the marketplace. It is no longer acceptable to assume that good products will sell themselves, neither it is advisable to imagine that success today will carry forward into tomorrow.

Let us consider the bases of success in any competitive context. At its most elemental, commercial success derives either from a cost advantage or a value advantage or, ideally, both. It is as simple as that – the most profitable competitor in any industry sector tends to be the lowest cost producer or the supplier providing a product with the greatest perceived differentiated values.

Put very simply, successful companies either have a productivity advantage or they a „value” advantage or a combination of the two. The productivity advantage gives a lower cost profile and the value advantage gives the product or offering differential „plus” over competitive offerings.

Gaining competitive advantage through logistics: of the many changes that have taken place in management thinking over the last ten years or so perhaps the most significant has been the emphasis placed upon the search for strategies that will provide superior value in the eyes of the customer. To a large extent the credit for this must go to Michael Porter, the Harvard Business School Professor, who through his research and writing has altered managers and strategists to the central importance of competitive relativity in achieving success in the marketplace.

Logistics management has the potential to assist the organization in the achievement of both cost/productivity advantage and value advantage. As fig.1 suggests, in the first instance there are a number of important ways in which productivity can be enhanced through logistics. Whilst the opportunities for better capacity utilization, inventory reduction and closer integration with suppliers at a planning level, are considerable.

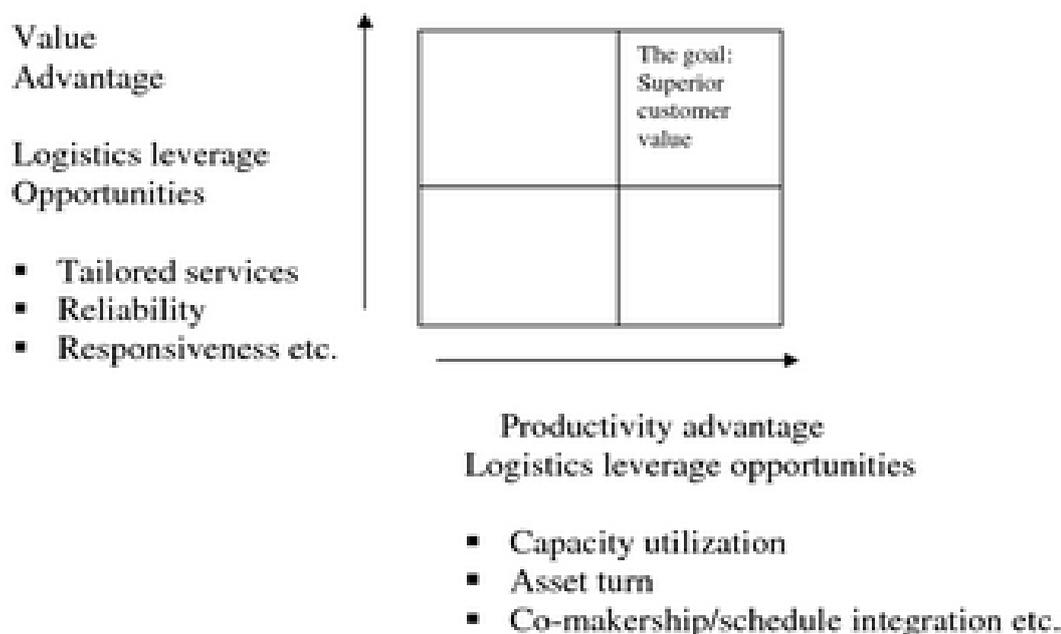


Fig. 1. Gaining competitive advantage through logistics

The summarize, those organizations that will be the leaders in the markets of the future will be those that have sought and achieved the Twin Peaks of excellence: they have gained both cost leadership and service leadership [3, p. 12].

Logistics as an influence on strategic decisions: The investigation of any market opportunity commences with marketing forecasts, which identify the potential overall and market segment volumes available. The price/volume combinations, and the profiles of both customers and resellers. From this analysis a profile of the market can be made which will identify the location and nature of demand and the service requirements of customers and intermediaries (if they are seen as an important feature in reaching overall marketing objectives).

Such a profile will identify the infrastructure best suited to maximize the opportunities available. The inclusion of logistics activities enables a broader view to be taken of how the opportunity might best be approached. If the economics of logistics activities across a range of

throughput volumes are known, it is possible for management to review a number of production options that may include total manufacturing of all components, a predominantly assembly operation or a combination of manufacturing and assembly of components. The important characteristics of the decision usually concern the relationship between fixed and variable costs, both initially and throughout the product forecast life cycle. This does require a view of the market, its competitors and an assessment of market risk. The fig. 2 illustrates the manufacturing/assembly options facing the business. Clearly much the same argument may be made concerning the distribution/logistics infrastructure. Increasingly companies are evaluating the efficacy of „make or buy” in both production and distribution activities. Operational gearing (the relationship between fixed costs and total costs) is an important decision area.

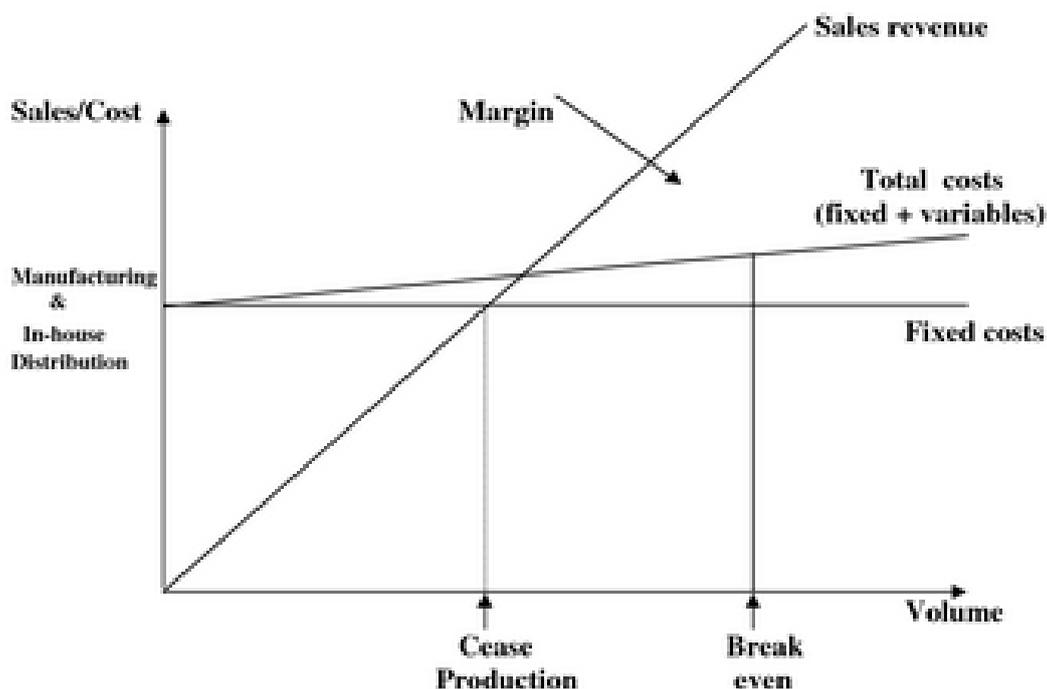


Figure 2. The implication for fixed and variable costs of the make or buy decision: operational gearing

The long-term perspectives of costs behavior are also important. Again the structure of the response (operational gearing decisions) will be influenced by the expected market trend.

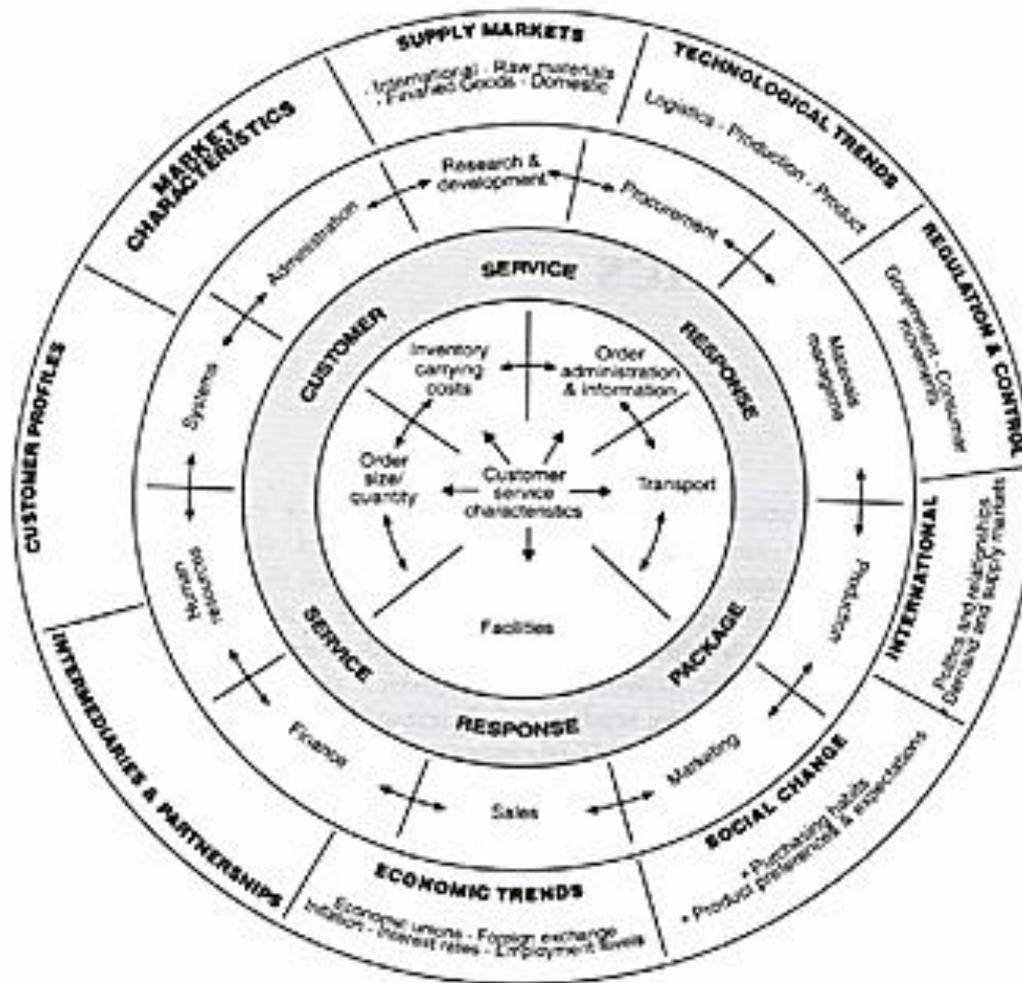


Figure 3. The environment of logistics management

The internal environment of logistics. We can view the logistics internal environment from two perspectives. First there are the activities for which the function has direct control. Second the other internal functions with which logistics is in contact and over which it exercises some indirect control or influence are the conventional business activities.

- the direct control environment

Logistics has direct responsibility for the co-ordination and control of the „logistics mix” activities (order administration, transport, facilities, order size/quantity, and inventory cost). These functions were separate activities or activities with individual managers, tasks and therefore objectives. Consequently, each function sought to maximize its own objectives: for example, order administration and information activities might attempt to process an ever-increasing number of order and inquiries. This may occur despite accuracy, and accordingly credit checks may be overlooked or superficial and order progressing inquiries serviced inductively. These and other similar „cross inefficiencies” are avoided by the creation of an overall coordinating role in the form of the logistics function.

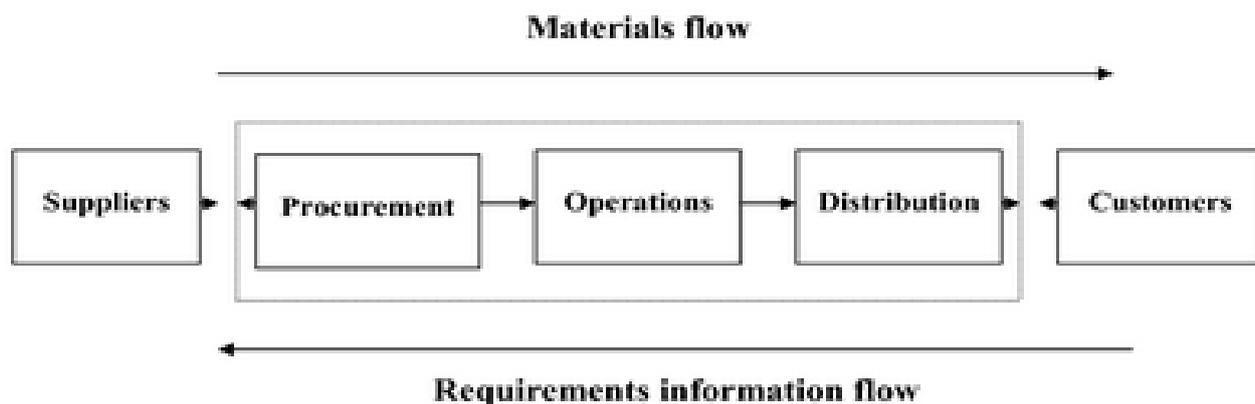


Figure 4. Logistics management process

The effectiveness of this approach can be seen by considering figure 4, which identifies the cross-functional concerns involved. In figure 4 is identified four customer service characteristics and considered the issues confronting the „logistics mix” activities. It can be seen immediately that some aspects of customer service can impose cost penalties. For example, frequent deliveries, a not uncommon requirement by customers operating JIT production systems can result in a number of problem areas.

The conclusion reached is simple, if difficult to interpret and implement: customer service decisions require careful analysis. It follows that unless it can have demonstrated that the overall benefits of a specific level of customer service exceed the overall cost, then there are obvious doubts concerning the efficacy of that particular customer service offer. The benefit of a coordination function (such as that offered by a logistics management role) is that trade-off situation across the mix can be explored. For example, the decision taken by an UK-based automobile manufacturer. During the early 1980s it was found that the costs of maintaining inventories of parts in Scandinavia were excessive in comparison with the returns obtained. Parts were transported by sea the Norway and Sweden. The entire range of service parts was maintained in a number of locations. Usage began to suggest seasonal trends and also identified the slow moving items. As a result of a study to identify cost-effective alternatives, a radical solution emerged. The range cover was reduced with only fast moving (and some medium-moving) parts being held on territory, with the remainder being serviced by air freight from the Midlands-based distribution center in the UK. This example is a good case study to demonstrate how an increase in one logistics element, in this case transportation (airfreight replaced by sea freight) can lower the overall costs of service.

- *The indirect control environment.* Considering the sequence of, Research & Development, procurement, material management production scheduling and marketing. An unsatisfied customer need may be identified to R&D were initial activities would benefit considerably if, together with a projection of market volume potential, additional information concerning „shelf life” expectancy or other supply chain characteristics were identified. This would help prescribe materials inputs, packaging, and so on, in the process of developing a product with ideal customer expectancy characteristics.

More direct is the influence that logistics management can have on sales and marketing results. Sales volume can be directly influenced by an effectively managed level of customer service and may also be enhanced by the introduction of new technology.

Material management would find itself with higher operating costs due to the fact that large than necessary storage facilities would have been built. Marketing could find that full prices for products were not obtainable owing either to excess stocks or perhaps dated merchandise. Finance, too, would be operating less than effectively: excess stockholding implies a requirement for more working capital than necessary. Another example, which is not unusual, concerns the width of the product usage offer. A wide product range may give marketing the advantage of wider appeal for customers, and may also increase the size of sales transactions. However, it has a number of disadvantages. A wide product range requires a larger stockholding of raw materials (a disadvantage for procurement, materials management and production). Finance is faced with higher working capital requirements. So the overall coordination role by logistics function which uses its skills in managing stocks and flows through procurement, materials management, production and the physical distribution of finished products is invaluable at both the strategic and operational levels of business planning.

- *The external environment of Logistics.* Each of the external elements represented on the periphery of figure 1-1 has significant meaning for logistics management. Below is listed a brief review of each of these elements.

- Supply markets

There are a number of issues here and the main area of interest concern the expansion of sourcing into international markets. For a number of well-organized companies there exist structured sourcing plans which have been established on the basis of using existing skills in emerging countries. For example, there are a number of Western European manufacturers and retailers who very quickly evaluated the skill bases on the Eastern European countries as they abandoned communism. Their rationale was based on the known traditional skill levels together with the knowledge of current labor rates and assumptions concerning the medium and long-term effects of inflation. With this knowledge a procurement/sourcing plan was evolved with the help of logistics management who were able to analyze the likely logistics considerations and therefore the impact of these on costs of raw materials, components and finished goods.

- Technological Trends

Technology has made a major impact on all aspects of industrial activities. The influence of information technology has changed the nature of business operations beyond recognition. The impact on logistics has been twofold. Not only have logistics functions been required to assimilate changes such as EPOS data capture and EDI (electronic point of sales and electronic data interchange) and respond in terms of organization and operating methods, but logistics as a function has been required to change to accommodate changes in other functions. For example, IT has been a basis for the introduction of JTI manufacturing methods and in marketing, lower costs of equipment and increased memory capabilities have introduced data base marketing into manufacturing and retailing. The application of technology to production processes and to products has required logistics to consider its response. In addition, the nature of many products has changed. Products have changed shape, size and value. Some have undergone complete changes of physical characteristics requiring the development of new logistics technology. Example, the food industry.

- Regulation and Control

The control of food distribution would be very difficult without the knowledge that temperature control equipment and vehicle performance reliability are at very high levels. Thus it is possible for government to impose strict requirements concerning the delivery and selling ambience of perishable

products (particularly food and drugs requiring temperature control). Quality control and customer protection across a range of product sectors have increased and there are many issues for logistics managers to concern themselves with. For example, the increased rights that have accompanied consumer legislation concerning product liability (and performance) have increased the number of return of defective products.

- **International Politics and Relationships**

In recent years there have been a number of changes in international relations which have influence the patterns of demand and supply markets. The removal of sanctions, subsequent to an international agreement, in South Africa has opened a market opportunity for many products and eased the situation for South Africa exports. Both require the attention of logistics management to ensure cost-effective stocks and flows systems. The general, overall reduction of tension in many parts of the globe also changes the patterns of expenditure. With less of the GDP allocated to military expenditures, more may be allocated to industrial and consumer goods thus resulting in an increase in product flows. Again these are issues of concern for logistics managers. Clearly there are situations where the reverse is occurring (the Balkans) and the logistics role may be not commercial. Rather, here is a need for the expertise (and capacity) to be applied to supporting the shipment of aid supplies.

- **Social Change**

The potential growth of home shopping will present logistics management with opportunities (and challenges) to develop systems which can accommodate multi-deliveries at customer designated time. The problems associated with such systems are not totally new.

- **Economic Trends**

As the interest of large businesses expand and become global in their nature so the impact of local economic trends became important. Logistics management is one area of management where some solutions are available. The truly global companies do have logistics systems able to respond to changes in long-term inflation and fluctuating exchange rate. Responsive logistics management is often the only way in which increasing procurement cost may be contained, either by utilizing more cost-effective transportation modes or methods; i.e. using lower cost transport modes or preferably using "partnering agreement" with other companies whose problems are similar. The growth of economic unions are likely to present new challenges to logistics management.

The expansion of the European Union, the North American free trade area, and the Asian grouping will see some interesting developments. One obvious challenge will be the aggregation of the impact of economic trends. The recent (1989/94) recession in Europe has a dampening effect on both industrial and consumer markets, and therefore on expenditure. In these circumstances there are considerable problems for business whose sales volume is concentrated within that economic area. For example, UK companies have some 70-80 per cent of their turnover within the union. A prolonged recession can, therefore, be damaging unless the variable costs of operations can be minimized. Alternatively, other markets may be considered, but these are often long term and require considerable amounts of information outlining the structure of markets and demand. However, it is a logistics task to identify the stocks and flows characteristics and to monitor the potential infrastructure and its costs in order that business take every opportunity available to spread the increased risk that the growth of trade blocs may bring.

- Intermediaries and Partnership

This aspect is concerned with identifying, as partners, companies who share mutual trade objectives, strategies and target markets (and customers) but who may have less that effective delivery systems, as marketing expand and develop in locations, which are increasingly distant, economies of scale become very significant.

- Customer Profiles

An important consideration for both marketing and logistics is an understanding of the Customer.

- Marketing characteristics

Specific markers structures usually produce expected type of behavior. For example, a monopolist may be in a position to determine levels of service to customers. Clearly they have no alternative sources of supply.

*Logistics environmental assessment.* A primary factor in developing a strategic logistics system is to understand the internal and external forces that will influence the functioning of this system. An important input to logistics planning is to access, monitor and evaluate environmental challenges.

- Industry Competitive Assessment

This assessment involves a systematic review of opportunities and potential limitations within a firm's specific industry based on such factors as market size and growth rate, profitability potential, critical success factors, off-shore competition, and labor issues. Analysis of competitive forces includes industry leadership influence and control, international competition, rivalry and confrontation, customer and supplier power, and core competencies of key competitors. A careful benchmarking study of competitors' logistical competency is important to understand the basic level of customer performance required being an effective industry participant.

- Geo-market Differentials

The logistics facility structure of an enterprise is directly related to customer and supplier location. Population density of geographical areas, traffic patterns, and projected demographic shifts all affect logistics facility location decisions. Demographic information such as age, income, and education is fundamental to identify and pinpoint specific marker potential. Mapping and understanding industry demographics are essential to effective logistical planning. Companies like McDonalds must stay on top of these geo-market factors to determine which retail store locations offer the most favorable market potential [5, pp. 36-51].

- Technology Assessment

Among the technology areas that influence logistical systems, the most prominent are information, transportation, material handling, and packaging. The flow of timely and accurate information is critical to an enterprise. Integrated databases capable of tracking the movement of materials, work in process, and finished goods inventory are being used to improve real-time managerial control and decision support. Soft-sided trucks, inter-modal and double-stack containers, and new routing options are examples of changing transportation technologies. Robots, computer vision, machinated storage, and an increased usage of automated-guided vehicle system (AGVS) are technological tools affecting material handling. Innovative developments in packing include stronger materials, nesting returnable containers, improved pallets, and a host of key identification technologies. The need for assessment is highlighted by the fact that most of the innovations noted above were not commercially available as recently as a decade ago.

- Material-energy Assessment

The continues dependence of logistical operations on fossil-based fuels is predicted to last well into the twenty-first century. This dependency requires that management understand political dynamics and maintain a search for alternative fuels as substitutes in case of material and energy shortages. Firms must continuously assess their required resources and evaluate potential alternatives. As key resources become scarce and their prices rise or their usage is limited, owing to environmental impact, a transition to alternative may be required. Trucking fleet are currently experimenting with alternative fuel conversions. Experimentation is also occurring with battery-powered vehicles to develop technology necessary for electric vehicles. All three big automakers are planning to develop and sell battery – powered vehicles by the end of the century. Awareness regarding the range of potential alternatives supplemented by an assessment of possible material-energy scenarios is essential for effective strategic planning. Such planning should position an enterprise to implement a transition rather than a panic reaction when change becomes economically feasible or mandated.

- Channel Structure

Logistical strategies are, in part, determined by channel structure. All enterprises, regardless of size, must conduct immediate logistical operations within a defined set of business relationships. For example, throughout industry the reduction in the number of material suppliers is a clear trend aimed at achieving improved product and delivery service. Enterprises regularly evaluate the relative advantage of distributing or buying products direct as contrasted to using the services of wholesalers. In some industries, the trend is away from wholesalers, while in others, wholesalers appear to be gaining in popularity. The growth trend in mail order and telemarketing also has a potential major impact on traditional marketing channel structure for some retail industries. Changes in the composition of demand, structure of supply, number of channel participants, and traditional channel relationships need to be regularly monitored to maintain logistical relevancy.

- Economic-Social Projections

The level of economic activity and the rate of change, as well as prevailing social attitudes and perceptions, are important to logistics. They are also difficult to predict. The slow recovery from economic decline in the early 1990s is a good example of how experts can disagree concerning social-economic trends. The actual trends that materialize directly affect logistical requirements. The illustrations that follow present the interrelationship of such impact. For example, aggregate demand for transportation is directly related to level of gross domestic product (GDP). This transportation demand is also dependent on labor cost and value of the dollar. When labor cost rise or the dollar becomes strong in relation to foreign currencies, imports increase. Interest rates, extremely volatile over the past few decades, dropped during the 1990s to the lowest level since World War II. Changes in interest rates directly influence inventory throughout the marketing channel increases. The desire to reduce inventory cost may, in turn, justify use of premium transportation to maintain service while enjoying an increase in inventory turn velocity.

Social trends, lifestyles, expectations, and attitudes all affect logistical requirements. Today, the potential spill of hazardous materials is a major social issue that influences public safety and jeopardize quality of life. Monitoring public sentiment and leading economic indicators can help an enterprise avoid potentially disabling circumstances and regularly assess risk involved in existing logistical practices.

### Service Industry Trends

Over the past several decades, growth in the service sector of the American economy has increasingly made it a greater part of GDP. Of particular interest to logistics are services related to transportation, warehousing, order assembly, and inventory fulfillment, plus a variety of computer-based information systems. These and other related services can be purchased from specialists when reengineering logistics system design. Logistics service providers range from relatively small local and regional firm to nationwide full-service enterprises. The portion of the logistical allocated to the acquisition of essential services from specialists continues to increase. The public warehouse industry in the US is now twice the size of railroad industry. From the viewpoint of logistical system design, such services have the potential to increase flexibility and reduce fixed cost. To be an astute buyer of services, it is essential that logistical manager maintain knowledge of prevailing practices and the rate of technology adoption throughout the service sector. Such a diversity supply structure places an extra burden on logistical managers to ensure that they receive competitive services and prices [2, pp.465-468].

#### - Regulatory Posture

Perhaps the most viable environmental change science the late 1970s has been in the regulatory structure of such industries as transportation, banking, and communication. Logistical manager has been confronted with a need to evaluate and predict the most likely national, state, and local government regulatory changes they will encounter.

## CONCLUSIONS

Finally, the somewhat distant but legendary comments of Peter Drucker when referring to distribution as "the last dark continent" for business to conquer resulted in a flood of activity which in a relatively short time result in the emergence and growth of an important management function. Drucker's comments raised an important issue concerning the cost of distribution to companies and a secondary issue (more important) as to who was responsible for managing distribution activities. The logic of including raw materials, components, manufactured parts and packaging materials within an overall flow of materials expanded the responsibilities of management into a broader logistics concept.

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## FEATURES OF APPLICATION OF PROVISIONS OF IFRS 17" INSURANCE CONTRACTS"

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**Abstract.** *The necessity of implementing of IFRS 17 "Insurance contracts" arose primarily because investors faced difficulties in analyzing the financial statements of insurance companies of different jurisdictions, in terms of the incompatibility of information presented in the financial statements of various countries. 17 IFRS "Insurance contracts" defines an insurance contract is a contract under which the holder transfers a significant insurance risk to the Issuer, who promises to compensate in case of insured event the contract holder. However, there are a number of questions as to whether some contracts involving payments fall under the definition of insurance contracts. For example: this applies to annuities and derivatives. As for annuities, a number of them fall under the definition of the insurance contract. For example: those who transfer a significant part of the insurance risk and have an obligation to pay a fixed amount to the contract holder for a certain period of time (retirement insurance contract).*

**Key words:** *annuities, derivatives, insurance contracts, financial instrument.*

### JEL CLASSIFICATION: M41

### INTRODUCTION

International Financial Reporting Standard 17 "Insurance Contracts" will replace the eponymous International Financial Reporting Standard 4, which was interim and allowed insurance companies to apply it in the process of transition to international financial reporting standards. It should be noted that the International Financial Reporting Standards Board (IASB) included issues related to insurance contracts in its agenda in September 2001, but only in May 2007 a preliminary discussion of the draft international standard on insurance contracts was held. IFRS 17 Insurance Contracts was published on 15 May 2017. The need to modify IFRS 4 "Insurance Contracts" is explained by the fact that when analyzing the financial statements of insurance companies in different jurisdictions, investors faced certain difficulties in terms of the incomparability of information presented in the financial statements of different countries. International Standard 17 "Insurance Contracts" was supposed to come into force for periods beginning on or after January 1, 2021, however, insurance companies should revise the comparative financial information for the previous year after the application of IFRS 17 Insurance Contracts began.

However, the International Accounting Standards Board has published a number of amendments to this standard, including in June 2020, namely postponing the effective date by two years for IFRS 17 "Insurance contracts", so that insurance companies can apply the provisions of this standard starting on or after 1 January 2023. However, earlier application of the provisions of this standard is allowed.

## **DEBATABLE QUESTIONS**

IFRS 17 "Insurance contracts" defines an insurance contract, as a contract in which its holder transfers a significant insurance risk to an Issuer that promises to provide compensation in case of an insurance event for the contract holder.

However, there are a number of questions as to whether certain contracts involving payments fall within the definition of insurance contracts. For example: this applies to annuities and derivatives. As for annuities, a number of them fall under the definition of an insurance contract. For example: those that transfer a significant part of the insurance risk and have an obligation to pay the contract holder a fixed amount over a certain period of time (for example: an insurance contract at retirement). In this case, the holder of the contract transfers a significant insurance risk in the form of uncertainty about the duration of his life and the adequacy of savings at retirement. Regarding derivative can be stated as follows: to meet the definition of an insurance contract, they must transfer significant insurance risk if this does not happen, then it does not qualify as insurance contracts.

It should be noted that a number of contracts that were previously recognized as such, were excluded from the scope of application of IFRS 17 "Insurance contracts", applying the provisions of IFRS 4 "Insurance Contracts", for example: guarantees issued, obligations for pension benefits under defined benefit pension plans, insurance contracts of an insurance company in which it is not the Issuer, but the contract holder. These contracts are not covered by IFRS 17 "Insurance contracts" unless they are reinsurance contracts.

In certain situations, certain insurance contracts may be accounted for in accordance with the provisions of IFRS 17 "Insurance contracts" or other international financial reporting standards, as appropriate. This applies primarily to financial guarantee contracts: both IFRS 17 "Insurance contracts" and the requirements of IFRS 9 "Financial instruments" can be used. This also applies to fixed-fee service contracts that can be accounted for in accordance with IFRS 17 "Insurance contracts" or IFRS 15 "Revenue from contracts with customers".

A new point in IFRS 17 "Insurance Contracts", which distinguishes it from the provisions of IFRS 4 "Insurance Contracts", is the fact that the provisions of the new standard apply to contracts where there is no significant insurance risk. For example, in cases of investment contracts with discretionary participation characteristics that are issued by the same company that issues insurance contracts. These contracts are financial instruments with discretionary payments.

As a summary, it can be stated that an insurance contract, in accordance with the provisions of IFRS 17 "Insurance Contracts", is an agreement between two or more parties that creates legal rights and obligations that are regulated by law, include explicit or implied conditions. However, the terms of contracts may differ from one jurisdiction to another - therefore, insurance companies will have to apply judgment to determine their material rights and obligations.

The insurance company must identify and separate the non-insurance components of contracts and account for them in accordance with the provisions of other IFRSs. Such non-insured events include: embedded derivatives, investment components that are accounted for in accordance with the provisions of IFRS 15 "Revenue from contracts with customers". Companies are not allowed to allocate other non-insurance components.

Once it is identified that an insurance contract falls within the scope of the specified standard, it should be determined what exactly is measured within the standard. IFRS 17 "Insurance contracts" requires companies to account for (measure) insurance contracts as the sum of cash flows on

performance of obligations and contract margins. Cash flows on performance of obligations represent the present value, taking into account the probability of expected cash flows, adjusted for risk, so as to take into account the uncertainty associated with insurance risk.

The contract margin reflects the profit that the insurance company expects to earn. However, these two components form an asset or liability in accordance with the requirements of the standard.

Therefore, a liability or asset under IFRS 17 includes the present value of cash flows, insurance risk adjustment, and profit.

From the point of view of contract measurement, IFRS 17 "Insurance contracts" has included provisions for a simplified approach to measurement, in the part that relates to the premium allocation approach applied to short-term contracts. When presenting information in financial statements with a simplified approach, the standard sets out a number of disclosures that are necessary, but they are not as extensive as for contracts that are accounted for in accordance with the basic requirements.

IFRS 17 "Insurance contracts" provides for the following disclosures in financial statements:

✓ ***in the balance sheet:***

***ASSET***

Assets under reinsurance contracts

Assets under insurance contracts

***LIABILITY***

Obligations under insurance contracts

Obligations under reinsurance contracts

The standard therefore requires that insurance and reinsurance receivables and liabilities are reported separately in the balance sheet, with information aggregated by group of insurance contracts.

In world practice, in most cases, assets and liabilities under insurance contracts were offset and presented as a single line. At the same time, just as in accordance with the requirements of IFRS 4 "Insurance Contracts", reinsurance contracts are reflected separately from insurance contracts.

To present information about the financial result, IFRS 17 "Insurance Contracts" sets out the following disclosures:

***Income from insurance***

*Recognized claims and expenses*

***Result from insurance services***

***Investment income***

*Insurance financial expenses*

***Net financial result***

Profit (loss)

Insurance financial expenses (optional)

Total comprehensive income

From the point of view of financial results disclosure, the standard provides more detail, since investors will receive information about two sources of financial results: from insurance services and net financial results. In other words, it will be possible to analyze the results of the company's insurance and investment activities. Previously, in accordance with the provisions of IFRS 4 "Insurance Contracts", this information was often not disclosed.

It should pay attention to the fact that the net financial result includes investment income minus insurance financial expenses. At the same time, investment income can be determined in accordance with the requirements of IFRS 9 "Financial instruments".

With regard to insurance finance costs, the standard allows to choose an alternative option that is reflected in the company's accounting policies and present such expenses related to claims obligations in profit or loss – or divide them by reflecting profits and losses and other comprehensive income.

If the company chooses to separate insurance finance costs in the financial statements, it should systematically reflect the total insurance finance costs for the period using a fixed interest rate at the date of claims, and in other comprehensive income reflect the difference between the amounts recognized in profit or loss and the result of discounting liabilities for claims based on the current discount rate in the balance sheet.

## CONCLUSIONS

It should be noted that insurance contracts combine the features of both a financial instrument and a service agreement. Many insurance contracts generate cash flows with significant variability over a long period of time. In this regard, IFRS 17 "Insurance Contracts" requires the presentation of results from the provision of insurance services (including the presentation of insurance income) separately from insurance finance income or expenses, and the choice in the accounting policies of the insurance company of the recognition of all insurance income or expenses in profit or loss, or the recognition of part of these income or expenses in other comprehensive income.

Thus, the insurance company must:

- ✓ *separate particular embedded derivatives, investment components and insurance contract performance obligations;*
- ✓ *divide insurance contracts into groups;*
- ✓ *adjust groups of insurance contracts to the:*
  - *present value of future cash flows, which includes all available information about cash flows, should be reflected in such a way that it corresponds to market information; plus (liability) or minus (asset),*
  - *amount representing unearned profit in the contract group (contract services margin);*
- ✓ *recognize profit from a group of insurance contracts during its term, if the group of contracts is unprofitable or becomes unprofitable, the insurance company immediately recognizes the loss;*
- ✓ *separately present insurance income (without investment component), expenses for insurance services (without investment component) and financial income or expenses for insurance;*
- ✓ *disclose information that allows users of financial statements to assess the impact of contracts subject to IFRS 17 "Insurance contracts" on the financial position, financial results and cash flows of the insurance company.*

IFRS 17 "Insurance contracts" includes a simplified approach to valuation, or premium allocation, for simpler insurance contracts.

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## VIDEO MATERIAL AT FOREIGN LANGUAGE LESSONS: SOME CONSIDERATION

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**Abstract:** *The article focuses on different trends in the use of video in a language classroom. The first part offers describes some theoretical approaches. In the next part a general methodology of using video in language teaching is briefly covered.*

**Key words:** *foreign language teaching, communicative competence, video support*

We live in a world of visual storytelling. Video is everywhere. Over recent years, YouTube has become the second most popular site on the internet, beaten only by Google. Three hundred hours of video are uploaded to YouTube every minute, and almost five billion videos are watched every day.

Education is not an exception. Nowadays the vast majority of language teachers use video materials in their classroom. In today's increasingly visual world, it is difficult to imagine the language classroom without YouTube videos, films, student-created artwork and media, and so on. Major and Watson [9, 50] write: "The emergence of recent video-capable technologies has been described as a 'tipping point', that is a period of time in which our views of the world are likely to be significantly altered through the introduction of improved capabilities in video technology."

As a learning tool, it's hugely powerful. Video is changing the way we learn things. In terms of learning, video content is emerging as one of the best forms of education. Research shows that the use of video as a teaching tool increases the efficiency of learning [7]. We learn more quickly, more deeply and more memorably. It also improves the quality of experience, so it impacts on motivation. Video has the power to positively influence both affective and also cognitive attitudes. This seems to be true for all ages, for all kinds of subjects, for different kinds of people.

However, despite the video boom in language teaching, we need to ask whether video materials are being approached merely as an aid or support, or as a significant component of communicating in a foreign language, and as a means of fostering students' communicative competence and creativity.

In order to answer this question, we need to examine how video materials have been approached in resource books and course books.

### **A history of using video in English Language Teaching**

Using video in a foreign language classroom has a rather long history. It's best described by Ben Goldstein in "A history of video in ELT" [6, 23-30].

The use of video in language teaching has undergone enormous changes since the media was first used in the 1980s.

When video was just starting to be used it played a largely superfluous role in the language classroom. The role of video was quite limited at that time. For many educators, video was indeed regarded as glorified audio. For example, Frances MacKnight writes: "Video can literally provide the complete picture: listening comprehension reinforced by watching comprehension... the main

linguistic benefit is considered to be the presentation of chunks of authentic language within a whole context” [8, 2]. It was a way of “doing listening comprehension tasks” but with the aid of the image to help with non-vocal communication such as body language. “Follow Me”, the BBC video course is a revealing way to see how video was used in the beginning. The series commonly showed functional language contexts with heavily scripted and rather unnatural dialogue. The purpose of the video was language focus.

Emphasis was placed on vocabulary (as well as grammatical content (inside and outside the courtroom). Therefore, the language teaching approach involves an initial focus on spoken discourse in context through oral comprehension during the viewing process of the film and television series. The legal terminology is then presented in its written form. The introduction and analysis of specific lexical and grammatical elements intervene only after the viewing and oral analysis of the film.

However, with the arrival of the Communicative Approach, some teachers took a far broader view. They moved away from seeing video as merely providing a model dialogue for students, seeing it both “as a source of information” in its own right and as a “stimulus” for other activities such as debate and discussion.

The teachers’ methodology handbooks about video promoted a number of tasks in which “active viewing” was seen as the key. More emphasis was placed on the interface. Teachers began to use the remote control to insert subtitles, freeze frame images and remove sound, etc. – all to give learners a more interactive role. The tasks often oblige the teacher to divide the class into groups with some students, for example, reading the script and others looking at the screen in silent mode and then coming together to piece together the scene. Or students were supposed to be engaged in information gap tasks, which demanded a greater level of engagement and interaction with the video material.

However, listening comprehension was still the most common task type. Typical video material was the series consisted of comic sketches using the same actors in different contexts, with heavily graded language and the exploitation based on skills practice – primarily listening and speaking.

Video was still very much viewed as an added extra, something you did on a Friday afternoon to alleviate the coursebook and its grammar syllabus. For this reason, most videos at that time were a form of light entertainment. Rarely would you explore anything of a more serious nature with video. This coincided with the fun element of many CLT coursebooks with the emphasis on games, songs and enjoying yourself with the language.

### **Current trends**

Last decades, we have seen how the role of video has changed radically. This transformation has gone hand in hand with a greater emphasis on the image, what can be termed “the visual turn”. Video, once only exploited for language or comprehension-based activities, is now used for many different kinds of tasks.

Firstly, the visual dimension of video is now focused on a greater extent than in the past. This does not mean just playing a video with the sound off and getting students to describe what they see but taking advantage of new video genres that include little or no accompanying text. Such films are excellent for basic level learners and can be used to do simple activities based around recalling visual images, such as memory tests.

Secondly, Video is now commonly seen as a Stimulus – as a springboard to other tasks, such as discussion or project work. Likewise, video materials are being exploited increasingly for their visual qualities with learners not having to worry about comprehension issues. This means that the same video sequence can be used for different levels. Instead of grading the input, you grade the task.

It is more possible these days to find video being exploited at the start of the lesson to activate schema and engage learners rather than as the culmination of other tasks. Popular websites such as <http://film-english.com> features many short films that have great visual impact and, at times, little text. The site includes ready-to-use lesson plans for teachers based on these clips.

Thirdly, in common with other media, the exploitation of video is currently moving away from working on purely lower order thinking skills – such as description – and is now encouraging learners to interpret what they view. Encouraging a more critical response is something that can be done at even basic levels. For example, after a video from YouTube is shown, students can then read and evaluate online comments to develop a more critical interpretation; they can then answer these comments and/or add their own.

So, rather than our learners following a model or merely critiquing that model, they can now design their own and thus contribute their own meanings. In the case of video, new genres and hybrids are being created as a result of these changes – remixes, mash-ups, etc. This is the future of video materials in the classroom - the learners providing the input themselves - designing, scripting, recording and transmitting it in any way they see fit. As Stephen Apkon puts it: "There is no better way to critically appraise the message of others than to speak one own's message" [1, 5].

This approach can also efficiently promote communicative competence. As we know, there are four dimensions of communicative competence: grammatical, sociolinguistic, discourse and strategic. Therefore, the language teaching activities include task-based teaching methods, for instance, in the form of mock trial exercises. In addition, when creating the syllabus, the CEFR (short for *Common European Framework of Reference for Languages*, Council of Europe 2011) is taken into consideration in order to identify and integrate the various tasks, skills and language competency levels [4, 101-115].

To sum up, the movement is clearly from Video Exploitation with the teacher guiding the class to Video Creation with the learner taking on a more active role.

Let's consider why video is such a useful tool in the language teaching classroom.

In her article "The Image in English Language Teaching" Antonia Clare defines the following peculiarities that help make video so effective as a language learning tool [3, 35-40]:

#### *Access to English speaking culture*

Video is hugely valuable as a source of cultural input. When we watch a video, we are immersed in a rich cultural picture. We don't just learn about the language, but we learn about how the language is used. Video gives us a cultural, socio-linguistic context for the language. Video teaches us about the world – it opens our minds to other cultures. So we're learning a lot more than just language.

#### *Visual context*

The visuality of film enables learners to understand more by interpreting the language in a full visual context. Film assists the learners' comprehension by enabling them to listen to language exchanges and see such visual supports as facial expressions and gestures simultaneously. These visual clues support the verbal message and provide a focus of attention. From this follows the next point.

#### *Impact on cognition*

One of the greatest strengths of video is its ability to communicate with viewers on an emotional as well as a cognitive level.

In education, we see that emotion and cognition are very closely interrelated. The aspects of cognition that we use when we're learning something – attention, memory, etc. are all profoundly affected by emotion. So this ability to reach learners' emotions means that video can have a positive

effect on both motivation and affective learning. These are not only important learning components on their own, but they play an important role in creating the right conditions for greater cognitive learning to take place.

#### *Active vs. passive learning*

Recent studies oppose the idea that viewing is a passive activity, supporting the theory that viewing is in fact an active process, in which learners are engaged in “an ongoing and highly interconnected process of monitoring and comprehending” and “a complex, cognitive activity that develops and matures with the child’s development to promote learning” [10, 7].

So, watching video, especially in another language, and especially if you’re watching with subtitles, whilst it may appear to be behaviourally passive, is a deeply cognitive activity. Also, we have a much better chance of remembering something that we watch on video than something that we read or listen to.

#### *Authenticity*

If we look at authenticity from a research point of view, we know that engagement with linguistically rich, emotive input leads to language acquisition [11]. Exposed to this type of authentic input, learners are likely to pick up on all kinds of language, which you might not even focus on, and this will help to build up their language knowledge.

Film provides students with examples of English used in ‘real’ situations outside the classroom, particularly interactive language – the language of real-life conversation. Film exposes students to natural expressions and the natural flow of speech. If they are not living in an English-speaking environment, perhaps only film and television can provide learners with this real-life language input.

#### *New language vs. language reinforcement*

Interestingly, when teachers use video in the classroom, it’s often to focus on new language. They might use a piece of video material to highlight elements of new language, for example a particular verb tense or phrasal verbs. This is likely to be useful. However, perhaps of even more value to the learner is the reinforcement of the language they already know.

Video enables the learner to consolidate language, perhaps to focus on another aspect of its use – the intonation, pronunciation. This type of reinforcement is often missing when we focus on moving through syllabus, working on new bits of language in every lesson.

#### *Tolerance of ambiguity*

When we’re watching a video, we’re increasing our learners’ ability to tolerate language that they don’t understand, by keeping them engaged with visual messages and cues, even when they can’t comprehend all the words they hear. This increased tolerance of ambiguity is an important language learning trait, which helps learners to cope with language experiences that take place in real time [2, 120].

#### *Discussion*

Video has the ability to really spark discussion in the classroom. Having engaged with a video, learners are likely to have an opinion on what they’ve watched, whether they agree or disagree, whether they enjoyed it or not, what they think about the characters, the setting, etc. As video is so rich in ideas and context, learners can also be encouraged to go beyond the information given, through critical thinking and analysis.

Also, learner achievement is directly connected to the level of engagement that learners feel with their peers, and video sharing is a good way to influence this. Sharing and enjoying videos as part of the learning process can be really motivating.

### *Ownership through creating videos*

As teachers, we often find it difficult to loosen control and let the learners take the reins. One way can be to get our learners to actively create their own videos. It might be that you can use the input video as a model for the kind of task you would like your learners to do. Many online videos lend themselves well to this kind of project, for example, 'how to...' videos, recipe videos, and 50 people and 1 question videos. If we get our learners to actively create their own videos, we help them to feel a sense of ownership and control over their learning, which is so important.

### *Visual literacy*

In 1982 UNESCO declared that the school and the family share the responsibility of preparing the young person for living in a world of powerful images, words and sounds.

In the era of digital images and social networks, there are opportunities for learners to intensively create, view, download and share an unlimited number of visuals, including video material. It is important then that we teach our learners to become not just textually literate, but also visually and media literate. In this information age, we need to train our language learners in visual communication skills to comprehend and evaluate multimedia messages and enable them to access the rise of visual culture on the internet, much of which is in English.

### *Human connection and empathy*

Video allows us to connect with people, and with their stories. We learn from other people; their skills, their experiences. This is what makes video such a transformational medium for learning. Great learning hinges on human connection. With video you can tell a story in a very powerful way; in a way that will literally transport people, in a way that will generate empathy.

### *Variety and flexibility*

Film can bring variety and flexibility to the language classroom by extending the range of teaching techniques and resources, helping students to develop all four communicative skills. For example, a whole film or sequence can be used to practise listening and reading, and as a model for speaking and writing. Film can also act as a springboard for follow-up tasks such as discussions, debates on social issues, role plays, reconstructing a dialogue or summarising. It is also possible to bring further variety to the language learning classroom by screening different types of film: feature-length films, short sequences of films, short films, and adverts.

To sum up, educational video:

- Reinforces reading and lecture material
- Aids in the development of a common base of knowledge among students
- Enhances student comprehension and discussion
- Provides greater accommodation of diverse learning styles
- Increases student motivation and enthusiasm
- Promotes teacher effectiveness

Given all these benefits of using video in the language learning classroom, it is not surprising that many teachers are keen to use film with their students, and an increasing number of them are successfully integrating film into the language-learning syllabus. Until quite recently it was difficult to find pedagogically sound film material to help students improve their language through watching film, and teachers had to spend many hours creating their own materials. However, with the advent of the internet there is now a wealth of online resources for both language teachers and their students. With so many resources, it's sometimes difficult for teachers to see the wood for the trees.

The choice of video materials should be determined and by the following practical aspects. Firstly, the movies have already been divided into episodes so it makes the task of specifying the communicative situations easier; the movies are available in hard copies. The latter is very important as a copyright issue has to be considered while working with such kind of materials. YouTube is now widely used, and this includes a lot of content which infringes the original copyright.

To avoid it, follow the recommendations:

- Checking the name of the uploader is the copyright holder – often this will be accompanied by a blue tick
- Exploring creative commons or public domain material
- Using a site where all copyright is guaranteed, such as the British Council's 'The English Channel' Cultural Content
- Presenting new or unusual ideas in a video is a definite bonus with video content
- Websites like The English Channel can present a wealth of diverse cultural-content to complement language-learning
- All contexts vary, but as a general rule of thumb: contemporary political content, and religious content in general, is probably best avoided.

Some practical tips may be obvious to experienced teachers but useful for beginners:

- A teacher should watch the material s/he is going to use beforehand so that s/he will be able to estimate how difficult it will be for her/his students to understand it and if it is necessary to switch on subtitles or be ready to show the episode twice.
- It is also necessary to check if disks to be used are compatible with the player installed in the computer; it might be useful (and not infringing copyright) to record a disk with the episodes for a personal use in class or to extract these episodes to a flashcard.
- Depending on the students' language level and teaching objectives, either the whole movie or just several episodes.

### **A Suggested Activities for Video Lessons**

- *Pre-Watching.* Distribute handouts with language tasks focusing on lexis or structure you have identified for the level. Students complete \*before\* watching again. Students watch again and check their worksheet answers
- *Screens Prediction.* Take some screenshots from the video and ask students - in groups - to create a story or situation that explains what's happening in all images. Students can then watch the video once just to check their prediction. This is most effective as a pre-watching activity, but can also be used as means of practicing writing after viewing a video.
- Play the video with no sound. Students discuss: what's happening? Why? What's the subject? What will happen? etc. This will require grading by level. Then play the video with sound. This is to check students answers from the silent task.
- Give students a basic idea of the video topic. Have them write questions they think watching the video might provide answers to. Emphasise this doesn't depend on listening, but can also be visual.
- *Post-Watching.* At this point, your students will have engaged meaningfully with a video, will be feeling more confident, practiced one (or more) skills, and completed some language work. From here you can:

- Role-play a scene: what happens next? Students must use some target language in their scene

- Group-writing: What happened before? Students write a prequel to the events they saw, again incorporating target language.

Students can be offered different types of exercises such as True or False (with justification); Gap Filling (listening comprehension for specific terminology); Definitions (contextual deduction); Simple to complex questions; Summary of the scene (Comprehension); Inference and deduction (Analysis of body language and expressions used during scenes); Debate and personal opinion ; Replacing a conversation in the correct order; Hypothesizing: What would you do and what could happen?; Syntax and grammar (Verbs, modals, adverbs, comparatives/superlatives, articles, etc.).

We'd like to conclude with some personal considerations.

Video-based lesson requires a lot of attention on the part of the teacher who must mediate between the video support and the students. It's well known that students like watching movies, but introducing this form of work for the first time a teacher should explain to the students how movies will be used during the course.

Films definitely highly motivate students, though it does not help them make much progress in listening comprehension. To compensate for these drawbacks, film should be used in combination with other materials.

Assigning homework may be somewhat risky because many of the students give priority to other classes and very little priority was given to English classes. For this reason, some of the homework assignments could be transformed into in-class oral or written evaluations.

The level of the materials used with the film should be just above the students' present level of English.

Maximum length of a lesson should be around 40 minutes.

The ability to get information from video materials may not be developed by a few months' training. It requires more time.

These statements are only the results of a limited study, so it would be dangerous to generalize them too much. We believe, however, our study sheds light on many neglected issues in the use of films and encourages many teachers to use films as one material for listening comprehension practice.

As student motivation is crucial in a language course, the author was initially quite hesitant to integrate film and television series into her class organization, fearing that the choice and use of film would not be of interest to the students. The final choice of a law-related film and television series was based on substantial personal research to ensure that the film and the series were appropriate for this setting. The positive feedback came in the form of attentive, motivated and intrigued students, who showed a marked interest in what they were learning and how it was being taught. They repeatedly expressed their satisfaction with the use of film and television series. The use of film in the classroom is much appreciated by students since "it is like a breath of fresh air."

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## INSTITUTIONAL DETERMINANTS OF FINANCIAL MARKET DEVELOPMENT

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**Abstract.** *The article analyzes the main problems that hinder the development of the financial market. To determine the factors, an analysis of the prerequisites for the development of the financial market was used, which made it possible to distribute the factors into separate groups. As a result of the analysis, institutional factors were identified that can affect the level of development of the financial market. The work also identified indicators that can be used to assess these factors.*

**Keywords:** *financial institutions, financial intermediaries, financial market, influencing factors, infrastructure.*

### JEL CLASIFICACION: G2

The rapid development of financial markets in recent decades has contributed to the growing interest of the scientific community in the role of the financial system in the economy, the mechanisms of its impact on economic growth, reasons for differences in the levels of development of financial systems and their structure in different countries.

A few decades ago, the financial systems of developed countries could be quite accurately divided into two types: "banking" (countries of continental Europe and Japan) and "market" (Great Britain, the USA and other Anglo-Saxon countries). During the 90s of the XX century changes have occurred in many European countries that make this division obsolete, because their financial systems have become much more "market". Nevertheless, differences still persist, which is why there is an extensive literature on the comparative advantages of one or another system.

The financial market is a special sector that has universal features, but also has specific features. The financial market has taken a special place in the general system of market relations and in the system of market regulation of the economy. Thanks to him, capital is distributed between various spheres of the economy, such as industry, science and technology, education and others.

The development of the financial market is seen as one of the tools to stimulate intensive economic growth, especially in the context of a shortage of resources or high prices for them on the world market. However, this sector of the economy is subject to the influence of factors, without the regulation of which financial and economic development is absent or limited.

The activities of financial institutions in the market are influenced by various factors, which can be divided into two main groups: factors of the external and internal environment, which must be taken into account in order to improve the efficiency of the financial markets.

Let us consider in more detail the elements of external and internal factors of the financial market.

External factors include the following: the state-political environment, the conjuncture of the world financial market, the technological environment, competition, financial literacy of the population.

Internal factors include the infrastructure of financial markets, the resources of financial institutions (financial, labor, material), financial products and services, the system of sales of financial products and services, the presence of specially trained personnel.

The infrastructure of financial markets is a servicing process of production of a service, the structure of financial organizations (planning and economic, structural, financial marketing, technical, expert)

Also, the infrastructure of the financial market can be divided into legal, informational (financial press, scorecards), depository registration network.

The state-political environment is a set of instruments of state influence on the functioning of the market, the "rules of the game" determined by the state in the financial market.

It should be noted that financial activity all over the world is considered as a socially oriented industry that contributes to the increase of the economic stability of society. In this regard, the financial market is subject to state regulation through the creation of special state control bodies, which is typical for almost all countries. The state-political environment also includes a set of regulatory documents and guidelines and recommendations that determine the behavior of its subjects in the financial market.

If we consider the conjuncture of the world financial market, it is necessary to understand the financial traditions and customs in different countries, world integration trends and the policies of individual countries in relation to the introduction of foreign companies into the domestic market. In recent years, the development of national financial relations has been influenced by the integration processes in the financial market [6]. The globalization of the economic space, the strengthening of the role of such political and economic interstate institutions as the World Trade Organization, have a direct impact on the world financial market. The globalization of the world financial market is a process of erasing legal and economic differences between national financial markets, with the aim of forming a global financial space.

The technological environment is associated with new financial technologies that encompass technical know-how as well as technological (new financial products and services).

Literacy is measured by the level of technology development in a particular country. Considering the foundations of the formation of financial literacy of the population in various sectors of the financial market, it should be emphasized that the level of the country's well-being is one of the main factors that determine the investment resources of society, and the level of financial literacy of the population is the efficiency and quality of the investment process [1]. Studies have shown that the main reasons for the lack of investment activity of the population are:

- underdevelopment of financial institutions;
- lack of investment products;
- lack of clear and accessible information;
- distrust of the population to financial institutions and the government;
- low income level of the main part of the population;
- financial (and not only financial) illiteracy and low culture.

Empirical research by M. D. Chinn and H. Ito showed that the level of development of the financial market is influenced by the openness of the economy, as well as legal and institutional development [2]. They used panel data from one hundred of countries to measure a range of indicators of financial development to find out if financial openness can lead to financial market development, taking into account legal and institutional development, and whether open consumer goods markets are a condition for financial openness [4]. The authors also set a goal to find out whether a well-developed banking sector can cause financial liberalization and lead to the development of the stock market, as well as complement or interchange the development of the banking sector and the stock market.

To identify the dependence of the development of the financial market on the openness of capital flows, M. D. Chinn and H. Ito used a model that also takes into account the level of legal development:

$$FD_{ti} - FD_t = \gamma_0 + \rho FD_{t-5i} + \gamma_1 KAOPEN_{t-5i} + \gamma_2 L_i + \gamma_3 (L_i * KAOPEN_{t-5i}) + X_{t-5i} + uti \quad (1),$$

where  $FD$  – is the level of financial development;

$(t - 5i)$  – change in the level of financial development over 5 years;

$KAOPEN$  – the degree of openness of the capital account;

$X$  – the vector of economic control variables;

$L_i$  – the level of legal and institutional development.

Lending to the private sector, capitalization of the stock market, the total volume of shares traded on the market, and the stock market turnover ratio (a measure of market activity) were taken as indicators of the development of the financial market.

Legal and institutional development is characterized by such indicators as the level of corruption, the level of law and order, the quality of the bureaucratic system, the level of protection of creditors' rights, the indicator of the effectiveness of the enforcement system when concluding contracts, the level of protection of shareholders' rights, and the indicator of the completeness of company reports [5].

As a result, the authors found that the development of the financial market depends on the openness of capital movement, both with and without legal development. At the same time, the development of specific financial institutions does not fulfill such a role. Thus, the general level of legal development is more important than the level of development of specific financial institutions. The hypothesis that the openness of the consumer goods market is a prerequisite for financial openness, and hence the development of the financial market, has been confirmed. It was revealed that the development of the banking sector is a necessary condition for the development of stock markets, while in less developed countries, the interaction of the banking and stock markets works in both directions.

Thus, based on the foregoing, the following factors can be distinguished that can affect the level of development of the financial market [3]:

- the degree of responsibility of the authorities;
- the degree of influence of large companies;
- business transparency;
- the role of personal connections in doing business;
- educational level of the population;
- the degree of household trust in financial institutions;
- openness of the economy;
- the level of elaboration of the regulatory framework;
- the presence of measures to combat fraud and other illegal actions.

The above factors are predominantly subjective and difficult to quantify them. Nevertheless, for research, scientists develop indices, use ratings of analytical and information agencies.

Thus, we have the opportunity to highlight the main problems hindering the development of the financial market:

1. Government passivity. To function, the market needs an infrastructure that is beneficial to

every market participant. However, no company will bear the cost of developing such an infrastructure. Therefore, the state is most suitable for this purpose and should not be passive. However, the availability of the possibility of forming the infrastructure does not guarantee that the state will perform this function. Even if the state respects property rights, another obstacle to financial development may arise. Small groups can influence government policy for their own benefit and at the expense of society.

2. Threat to large industrial enterprises. Such companies with a stable position during a period of stability do not need a financially developed system. They can finance new projects from income from existing businesses without access to external capital markets. Even when the need for external financing arises, they can offer their reputation or the assets they hold as collateral or guarantees. In addition, the development of the financial market generates competition, and competition reduces the profits of large industrial market participants. It is important for financial companies to be able to monopolize the provision of the client with financial resources so that his threat to stop lending has weight. The development of the financial market also requires more transparency in doing business, which prevents the use of personal connections and contacts.

3. Significant role of personal connections in the implementation of financing. In the absence of full disclosure and proper execution of contracts, any non-secured funding is based on personal relationships. Therefore, the development of the financial market means not so much new opportunities for expanding its activities, but a threat to the sources of income obtained through doing business through various informal contacts.

4. Lack of education or passivity of the majority of the population in matters of finance and law. Because large industrial enterprises can influence policy, preventing them from setting barriers to financial development remains the prerogative of large populations. However, the majority of the population does not have enough strength or knowledge to get out of the state of calm satisfaction, and potential new players are few and unorganized.

The solution of these problems should occur with adherence to the basic rules, and solutions should contribute to the development of the institutional structure of the financial market, increase the efficiency of its functioning.

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## MAIN PRINCIPLES AS APPLICABLE TO DEVELOPMENT OF THE SYSTEM OF SUPERVISION OVER THE ACTIVITIES AND QUALITY OF AUDIT SERVICES

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**Abstract:** *The principles of the system of supervision over the activities and quality of audit services make up the foundation for its designing, allow avoiding problems of fair and impartial treatment of external quality control audit implementation and thus promote business development.*

*During the scientific research on this topic, good European practices regarding the design of the system of supervision over the activities and quality of audit services were investigated, in view of the commitment assumed by the Republic of Moldova to transpose the provisions of the Community acquis into national law.*

*Based on the results of this research, the author finds several important conceptual issues with normative character, which should be addressed during the development of the system of supervision over the activities and quality of audit services through the principles of its organisation and functioning recognised at regional and international levels.*

### INTRODUCTION

The system of supervision over the activities and quality of audit services is defined as a set of principles, rules and elements ensuring the conduct of auditors and audit firms' activities in conformity with the professional standards, which are generally accepted by the international professional community.

From the perspective of compliance with the community acquis requirements, the EU Member States and those ones, which signed association agreements, have recognised the goods conceptual practices that relate to the system of supervision over the activities and quality of audit services and are based on certain principles, rules and standards ensuring the successful administration of the risks pertaining to the quality of audit.

Based on the Association Agreement, the Republic of Moldova undertook to make enormous efforts for prompt modernisation in conformity with the European standards, by assimilating about 70% of the community acquis and, respectively, by implementing the provisions thereof in the fields concerned, inclusively by complying with the requirements of Regulation (EU) No.537/2014 of the European Parliament and of the Council of 16 April 2014 on Specific Requirements regarding Statutory Audit of Public-Interest Entities.

First of all, aiming to realise this commitment, there was drafted the Table of transposing Directive 2013/34/EU of the European Parliament and of the Council of 26 June 2013 on the Annual Financial Statements, Consolidated Financial Statements and Related Reports of Certain Types of Undertakings, into national law [4].

According to Article 32 of Directive 2013/34/EU, 'Member States shall organise an effective system of public oversight for statutory auditors and audit firms based on the principles set out in paragraphs 2 to 7, and shall designate a competent authority that will be in charge of such oversight' [Article 32, Directive 2013/34/EU].

The principles of the system of supervision over the activities and quality of audit services refer to the system organisation and functioning requirements that settle the challenges pertaining to the equitable and unbiased treatment when carrying on the external control of audit quality, and that are simultaneously considered when setting the conditions for making the quality assurance information transparent and accessible to the entire society, thus contributing to business environment development. Further, the author shows in Table 1, the generally accepted principles at the level of EU community in parallel with domestic law requirements as correlated with the principles of oversight.

**Table 1.** Main Principles of Designing up a System of supervision over the activities and quality of audit services

<b>Generally accepted principles at the EU community level</b>	<b>Requirements of domestic law as collaborated with the principles of oversight</b>
P1. Any and all audit firms and statutory auditors are subject to public oversight	Any and all audit firms are subject to external quality control
P2. The competent authority is governed are governed by non-practitioners	The audit supervisory board is formed of 7 non-practicing members
P3. The ultimate responsibility for oversight is in charge of a competent authority	A public audit oversight body is the Council, approved by the Government
P4. The competent authority is vested with the competences required for exercise of its functions and competencies	The Council is an independent public establishment with the status of a legal entity, which is responsible for public audit oversight
P5. The competent authority is independent and transparent	The Council carries on its activities as based on self-management principles; the information about its activities is published on the official web page

*Source: Developed by the author as based on the provisions of Directive 2013/34/EU and Act no.271/2017 [1; 2]*

When analysing this table, one may see that since the Republic of Moldova is concerned about harmonisation of the domestic legal framework with the European standards, the author draws a conclusion that such principles are essential both for our State and for those ones, where democrats are less aware of the need for developing a concept of the system of supervision over the activities and quality of audit services.

The expectations of the business environment and, generally, of audit findings beneficiaries in respect of financial auditors are mainly related to realisation of certain commitments for quality audit. Hence, considering the good international practices as provided for in Directive 2006/43/EC of the European Parliament and of the Council of 17 May 2006 on Statutory Audits of Annual Accounts and Consolidated Accounts, the author thinks that there may be outlined the following main conditions for the concept of a system of supervision over the activities and quality of audit services:

- Area of applicability of external quality control,
- Independence of the public oversight system,
- Professional training and relevant experience of the supervisory authority's employees,
- Professional rationale and objectivity when conducting the quality assurance reviews.

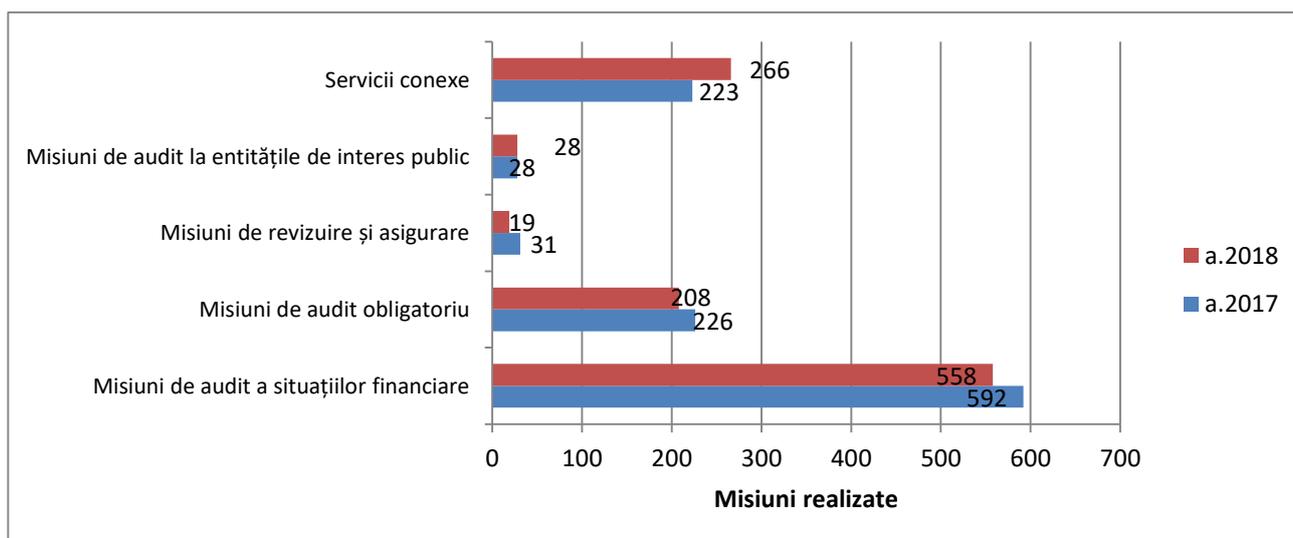
According to Directive 2006/43/EC, the State shall organise an effective system of public oversight for statutory auditors and audit firms, so that all of them should be subject to public oversight. [Article 32.1]. Thus, as a result of transposing the European requirements into national law, this provision is found in Chapter Eight of Act no.271/2017, stipulating that any and all auditors

and audit firms are subject to public oversight. Any and all audit firms are subject to external quality control at least every six years, while the entities that carry out audit of public-interest entities shall be subject to external quality review every three years. Any and all audit firms are subject to external quality reviews [Chapter VIII, 2].

However, we believe that since the functional aspect of the audit supervision system is determined by professional rationale thereof when setting the area of applicability of external quality reviews, then it is important that the conceived procedures for setting the area of such reviews conduct should be also supported by adequate testing of audit files, including the assessment of conformity with the standards of audit and the principle of independence, and there should be also considered the internal quality control system of an audit firm, audit fees recovered and other resources spent.

Moreover, it is proposed that there shall be also subject to external control other audit commitments, in addition to those ones realised at public-interest entities and at entities that are bound by different legislative and regulatory instruments to retain an audit firm for the audit of financial statements.

The chart below provides the types of audit commitments realised by auditors and audit firms from the Republic of Moldova.



Related services

**Audit commitments at public-interest entities**

Review and assurance commitments

Mandatory audit commitments

Financial statements audit commitments

**Commitments realised**

**Chart 1. Audit commitments realised by audit firms from the Republic of Moldova over 2017-2018**

Source: Developed by the author as based on the Information on audit services market [2.4]

If we analyse the chart of audit commitments realised over the last two years, we will notice that the subject of review of the majority of audit commitments are annual financial statements and/or consolidated annual financial statements. Only 28 audit commitments of those 592 ones concerning the financial statements were realised at public-interest entities in 2018.

Hence, we consider that it will be correct to extend the external controls realised in order to assure the quality, as well, of other audit commitments for financial statements, carried out by audit firms at their clients and relating to the period under quality review. Hence, the area of conduct of such controls may be also extended to other kinds of commitments, thus allowing to apply a more complex base for assessment of the quality control system at the level of an audit firm, as well as for examination of abidance by the professional ethics requirements to auditors.

The independence of the system of supervision over the activities and quality of audit services is a pre-condition for free and unbiased exercise of powers and functions by the relevant authority. The generally accepted principles at the level of the EU community stipulate that the competent authority shall be governed by non-practitioners. So, although a State may appoint one or more competent authorities to exercise the powers of supervision over the activities and quality of audit services, Directive 2006/43/CE provides that the ultimate responsibility shall be vested only on an authority. For instance, the authority charged with the ultimate responsibility for exercise of public oversight powers in Romania is the Statutory Audit Public Oversight Authority, which is subordinated to the Ministry of Public Finance [3].

In the Republic of Moldova, the ultimate responsibility for oversight is vested on the Council for Public Audit Supervision, which was approved as a body of public audit oversight by the Government of the Republic of Moldova [2].

The independence of the system of supervision over the activities and quality of audit services presupposes organisation thereof so that it would be independent from audit firms and statutory auditors under review. According to the generally accepted principles at the level of EU community, the competent oversight authority is governed by non-practitioners, who have knowledge in the fields that are relevant for statutory audit. They are selected as based on an independent and transparent appointment procedure.

Meanwhile, the abidance by the principle of independence presupposes that funding of the oversight system shall be secure and free from any potential undue influence by audit firms or auditors, i.e. this system must have the relevant resources not depending on the contributions of those ones subjected to public oversight. Presently, the Council for Public Audit Supervision has a varied range of financial sources, inclusively: payments for getting the professional qualification of auditor and for registration of the audit subjects, annual contributions of auditors and trainees, tariffs set for the services rendered under law, and allocations from the public budget.

However, according to the estimates, the main source of funding of the Council's activities are annual fees of audit firms and annual contributions of auditors. According to Article 39 of Act 271 of 15 December 2017, annual fees of audit firms are calculated as per auditor's report issued, i.e. as an average monthly salary in the national economy per auditor's report issued for the audit of individual financial statements at public-interest entities or at large entities. As for the audit of individual financial statements at non-public-interest entities or at large entities subjected to mandatory required audit, there is applied the annual fee amounting to 0.2 of the average monthly salary in the national economy, as forecasted and annually approved by the Government of the Republic of Moldova.

We think that it would be right if the activities of oversight authority were not funded directly by the subjects under control, otherwise, there is a risk of breaching the principle of independence of such an authority when it exercises its powers and functions. Directive 2006/43/EC provides that the

funding for the public oversight system shall be free from any undue influence by auditors or audit firms. [Article 32 (7), 1].

Thus, relying on the above principle, there may be allowed the funding from the subjects under oversight, provided that there is avoided their undue influence. Hence, the actual version of the Council funding model set by Act 271 of 15 December 2017 stipulates that the payments to be made by auditors and audit firms shall be in fixed amounts and shall depend only on the forecast of the average monthly salary in the national economy, but not on the amount of the fees received from realisation of audit commitments. All the more so, the annual contributions shall be paid both by auditors and by trainees in the field of audit. So, the annual contributions for auditors are set as amounting to 0.1 of the average monthly salary in the national economy, as forecasted and approved by the Government on a yearly basis, while the annual contributions for trainees are less and amount to 0.05 of the average monthly salary in the national economy.

The above principles are realisable if there are considered the goods practices shared by the EU Member States and manifested by compliance with a range of additional requirements as combined with the community acquis. Professional training and relevant experience are also a principle we regard as basic one for development of the oversight system, and directly ensuring the system quality. Not only successful configuration of such a system can settle the quality-related risks; but also professional skills of the oversight authority's employees, relating to statutory audit and financial reporting, can ensure the public's trust in realisation of commitments for supervision in the relevant sphere of activity.

We think that it is crucial that the concept of the system of supervision over the activities and quality of audit services shall avoid, in its basis, any and all conflicts of interests between those, who carry out external quality controls, and the audit firm or statutory auditor, who are subjected to such controls. Aiming to the abidance by this principle, we consider that it will be rational to emphasise the applicability of objective procedures for selecting audit firms or auditors included in reviews for specific quality control commitments.

## **CONCLUSIONS AND RECOMMENDATIONS**

If we synthesise the foregoing, the following conclusions can be drawn:

1. The concept of the system of supervision over the activities and quality of audit services in the Republic of Moldova is being harmonised with the good European practices. This is the reason why it is essential to treat correspondingly the principles serving as a basis for creation of the system of supervision over the activities and quality of audit services, when setting and developing the domestic regulatory framework. In this regard, there is recommended to abide by the conditions of supervision over the activities and quality of audit services, such as area of applicability of the external quality control, independence of the public audit oversight system, professional training and relevant experience of the oversight authority's employees, professional rationale and objectivity when carrying out the quality reviews.

2. The number of commitments for audit of financial statements at public-interest entities is very small if compared to those ones at other entities. Aiming to ensure a relevant base for assessment of the quality control system at the level of an audit firm and to examine the abidance by the auditors by the professional ethics requirements, it is proposed to extend the external controls realised in order

to assure the quality, as well, of other audit commitments for financial statements, carried out by audit firms at their clients and relating to the period under quality review.

3. The good practices shared by the developed countries and relating to the public audit oversight do not allow undue influence by auditors and audit firms on the oversight system funding. We think that it would be correct if the activities of oversight bodies were not funded directly by the subjects under control. Otherwise, there is a risk of breaching the principle of independence of such a body when it exercises its powers and functions. Hence, there is welcomed the principle stipulating that concept of the system of supervision over the activities and quality of audit services shall avoid, in its basis, any and all conflicts of interests between those, who carry out external quality controls, and the audit firm or statutory auditor, who are subjected to such controls.

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## MACROPRUDENTIAL POLICY UNDER CORONA-CRISIS: UKRAINIAN EXPERIENCE

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***Abstract.** The article discusses the theoretical aspects of macroprudential policy. The specifics of the current crisis caused by the coronavirus pandemic have been determined. The transmission mechanism of the current crisis in Ukraine has been formed. Potential losses and expenses during the crisis of 2020 in Ukraine have been assessed. The actions of the National Bank of Ukraine in modern conditions are analyzed.*

***Key words:** bank, state regulation, central bank, financial stability, macroprudential policy, financial crisis, transmission mechanism*

**JEL CLASSIFICATION: F30, F31**

### INTRODUCTION

Prior to the onset of the global economic crisis in 2007, the financial system was considered to be self-regulating, and existing instruments of stabilization policy, including monetary policy, could prevent a severe economic downturn. However, the crisis has led to the need to rethink modern approaches to the regulation of financial markets. It is considered that necessary to have a reliable regulatory and supervisory mechanism capable of recognizing and preventing financial shocks before they lead to a crisis, while maintaining favorable conditions for the development of financial innovation. The functioning of such a macroprudential policy mechanism should ensure the timely identification of systemic financial risks, the effectiveness of financial supervision instruments, as well as adequate coordination between monetary, fiscal and other sectoral policies. It should be noticed that macroprudential policy and its toolkit has been developed to overcome the consequences of the financial crisis of 2008-2008. However, the current crisis got the name corona-crisis creates new challenges for economic actors, the state and regulators.

The formation of anti-crisis policy requires deepening research in this area. In particular, the following objectives need to be addressed: identification of specific features of the current crisis, substantiation of its transmission mechanism, assessment of the NBU's anti-crisis policy and development of directions for its improvement.

### A SHORT ANALYSIS OF THE MAIN BIBLIOGRAPHICAL REFERENCES IN THE FIELD OF RESEARCH

The effectiveness of macroprudential policy is less developed than other central bank policies. In particular, this applies to monetary and micro-prudential policies. Nevertheless, a large number of scientific publications have appeared on macroprudential policy, its tools and implementation since 2007. Authors in research [1] explain the most important concepts related to macroprudential policy, describe its objectives and the relationship between macroprudential policy and other economic

policies. In the article [2] the preconditions for the emergence and the need to introduce macroprudential policy are considered. The research [3] is on the macroprudential policy tools, its tools and implementation; special attention is paid to the use of indicators to guide macroprudential policy. Recently, studies [4] devoted to the episode of financial instability identification and justifying the use of macroprudential toolkit have been developed. The article [5] investigates the effects of macroprudential policies on bank risk. In addition, in the context of the current economic crisis, it is worth paying attention to the scientist's conclusion that "macroprudential policies are more effective in a tightening than in an easing episode" [5].

## **A DESCRIPTION OF THE RESEARCH METHODS USE**

The transmission mechanism of systemic risk is a system of variables (links of the mechanism and distribution channels), through which the activities of banks can affect the financial stability of both the banking sector and the stability of the economy as a whole. The transmission mechanism of systemic risk is characterized by input (preconditions), transformative (activity of banks under the influence of factors and formation of risk sources) and initial (realization of a system event and materialization of risk) links. An important component of the mechanism is the transmission channels of systemic risk (sometimes called channels of financial contagion). After the realization of a system event, the materialization of systemic risk in the form of crises occurs precisely through its transmission channels [6]. There are credit, liquidity, currency, price, information and structural transmission channels of systemic risk and financial instability spread. The current crisis caused by covid-19 pandemic relates to borrower default channel that can be explain with the chain: "Real sector (borrower default) → Bank → Banking sector". In more detail, the transmission mechanism of the spread of crisis is presented in Fig.1.

As can be seen from Fig. 1, the shock event that triggered the transmission mechanism of the crisis was the emergence and spread of coronavirus infection. The introduction of quarantine has led to a slowdown in economic growth. Due to the deteriorating condition of borrowers with a high probability, we can predict the growth of non-performing loans. A number of these events may lead to a deterioration of socio-economic indicators, such as economic growth, unemployment, budget deficit and potential default.

Improving scientific and methodological approaches to understanding the consequences of the corona-crisis and substantiating the tools for its regulation requires a distinction between the concepts of "costs" and "losses" caused by the implementation of the shock event.

We propose to understand losses as a long-lasting negative impact on economic development and sustainable growth. In quantitative terms, this will be embodied in slowing GDP growth, unemployment, and increasing the debt burden. While costs are the use of public funds to mitigate the negative effects of the implementation and spread of systemic risk.

Losses from the realization of systemic risk of the banking sector will have a significant negative effect on the real sector and the economy as a whole. In this regard, we consider it necessary to assess the dynamics of the following indicators of socio-economic development of Ukraine: slowdown in GDP growth, growth of debt burden, dynamics of the consumer price index and unemployment rate.

Generalization of the largest of the Ukrainian economy from the crisis in 2020 and the costs that will be spent on coping with the consequences and directly dealing with the crisis are listed in Table 1.

**Table 1.** Estimation of potential losses and expenses during the crisis of 2020 in Ukraine

Losses			Costs		
Deterioration of indicators of socio-economic development	2020	2021	Direct and indirect costs	202.	2020-2021
1.1 Nominal GDP (government forecast), %	-4,2%	+2,4%	1. "Long" refinancing loans for banks (UAH million)	2721,0	-
1.2. Real GDP (IMF forecast), %	-7,7%	+3,6%	2. Unemployment benefits (UAH million)	6000,0	-
2. Total losses on exports and imports of tourist services (UAH million)	1500,0	-	3. "Available" loans 5-7-9% "fact: issued loans (UAH million) max. plan:	283,5	-
				35 000,0	
3. Inflation (NBU forecast), %	+7,0%	+4,1%	3.1. "Available loans 5-7-9%" compensation costs% (UAH million) forecast:	3 850,0	
4. Inflation (IMF forecast) y %	+4,5%	+7,2%	4. State program to support the agro-industrial complex (UAH million)	4 000,0	-
5. Revenue decline in %:			5. "Large Construction" Project (UAH million)	75000,0	-
5.1. microbusiness	-90%	-			
5.2. small and medium business	-50%	-			
5.3. big business	-25%	-			
6. Reduction of staff in%:					
6.1. microbusiness	-50%	-			
6.2. small and medium business	-25%	-			
6.3. big business	-25%	-			

*Own elaboration based on [7-9].*

Predicting the consequences of the crisis in Ukraine in 2020, it should be noticed that the events would have a negative influence on all sectors of the economy and macroeconomic indicators. The main manifestations of the crisis are a sharp rise in unemployment; decline in business activity, loss of income of the real sector of the economy; reduction of GDP and budget revenues; growth of budget expenditures; falling revenues of the banking sector; deterioration of the quality of the loan portfolio of the banking system; negative balance of the normal balance.

The rise in unemployment is due to staff reductions, especially for micro-enterprises, where more than 50% of employees have been laid off. To overcome the losses in this direction and the costs associated with the deterioration of the population welfare, measures based on world experience are recommended. They are increase in unemployment benefits, subsidies for enterprises, tax benefits for the most vulnerable industries and small businesses, public procurement. To counteract the loss of income of the real sector of the economy, it is recommended to conduct a program to support entrepreneurs, provide loans to entrepreneurs at a reduced interest rate. It is

important to add, that most of help is required by small, medium-sized businesses and vulnerable industries. The following measures can be proposed to support the banking sector: providing refinancing loans, lowering the discount rate to stimulate the provision of affordable loans by banks, financial recovery of banks with solvency problems, particularly through their recapitalization and restructuring of problem assets. Maintenance of a stable national currency exchange rate is possible due to foreign exchange interventions and improvement of the Trade Balance. To implement the second measure, it is necessary to stimulate export industries and attract foreign investment. In the long run, these measures will lead to a revival of business activity, GDP growth and, as a consequence, replenishment of the budget.

It should be noted that some of these actions are already involved in the government and the NBU in particular. Also, to overcome the crisis, a necessary condition is to synchronise bank regulation and other sectors of the financial market based on the exchange of information between their regulators for taking prompt action to eliminate imbalances in the economy. With the introduction of anti-crisis measures, the question of filling the budget in the short term is acute. To address this issue, governments in other countries are redistributing funds to the most vulnerable sectors of the economy.

In order to mitigate the impact of the pandemic on the banking sector and to support the economy, the NBU has significantly eased regulatory requirements for banks. The introduction of capital buffers has been postponed, and banks are allowed to restructure customer loans on mutually beneficial terms. To facilitate lending, the NBU has also introduced a new floating-rate long-term refinancing instrument. This will increase the positive effect of lowering the discount rate.

## **CONCLUSIONS**

Macroprudential policy aims to ensure financial stability and overcome the negative effects of systemic risk. Nowadays, there is a lot of research on the effectiveness of macroprudential instruments. However, they have shown limited effectiveness during periods of mitigation, including recession.

The paper defines the transmission mechanism of systemic risk as a system of variables (links of the mechanism and distribution channels), through which the activities of banks can affect the financial stability of both the banking sector and the stability of the economy as a whole. The sequence of crisis phenomena caused by the Covid-19 pandemic is substantiated. The losses due to the development of the crisis, as well as direct expenditures of public funds aimed at overcoming it have been assessed. It is established that the NBU during the crisis has significantly eased regulatory requirements for banks. At the same time, taking into account the limited possibilities of macroprudential tools during the recession, the need to coordinate macroprudential policy with monetary, fiscal and sectoral policies has been identified.

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## DEBATE ON THE RECOGNITION OF INCOME IN PUBLIC EDUCATIONAL INSTITUTIONS WITH FINANCIAL AUTONOMY

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**Abstract.** *The article addresses the issue of recognizing the income of public higher education institutions with financial autonomy, taking into account the accounting regulations in force and the particularities of their activity. We analyzed a series of normative acts governing the formation and recognition of revenues within these institutions, as well as issues related to their recognition, starting from the provisions of the national accounting framework, but also from the literature on this subject, which, unfortunately, it is not very rich.*

**Key words:** *National standards of accounting, income, public educational institutions with financial autonomy.*

**JEL CLASSIFICATION : M41**

### INTRODUCTION

The accounting reforms that have taken place in the last 8 years have been revolutionary for public educational institutions with financial autonomy, their purpose being to adapt them to the new economic and social conditions. We remind that starting with January 1, 2013, the Chart of Accounts of the accounting records regarding the execution of expenditure estimates of budgetary institutions was transferred to the Chart of Accounts of economic-financial activity, which more explicitly means the change of budgetary accounting system on corporate accounting. Thus, as of January 1, 2013, public higher education institutions with financial autonomy align themselves, from an accounting point of view, with those in the private sector and keep accounting in accordance with the Law on Accounting and Financial Reporting no. 287 of December 15, 2017 [1], National Accounting Standards [2], General Plan of Accounting Accounts [3] and other normative acts in the field of accounting. So, for these institutions it was a real accounting transformation, fundamentally changing the accounting methodology and engineering. A long period of transition, learning, adaptation and organization of accounting followed, but which unfortunately did not solve all the problems of this sector of the national economy.

The experience of private educational institutions, which at that time were already applying the NAS, could have served as a guide in this endeavor. However, previous studies [4, p. 16] show that private educational institutions also prevented deficiencies, largely in the recognition and accounting of income. Researcher Taban E. [4, p. 16] stated in her research that private higher education institutions recognized and recorded income from services differently, although they were based on the same normative stipulations.

However, the relay of difficult and debatable aspects is also taken over by public educational institutions with financial autonomy. However, they did not benefit from accounting guidance and

advice from public authorities in the process of transitioning from the budgetary to the corporate accounting system. On the contrary, some regulatory norms that presented only general guidelines and recommendations also contained methodological errors. Unfortunately, they were insufficient to ensure the coherence of accounting principles and to provide a true conceptual framework for the institutions concerned.

The range of problems and disputes of an accounting nature in public educational institutions with financial autonomy has expanded with the implementation of the new NAS in 2014, the implementation of new laws on accounting and financial reporting in 2019 and last but not least, the NAS changes in 2020. Unfortunately, for the older problems and disputes, no solutions were found in the improved and modernized accounting regulations. At the same time, a discrepancy was created in the normative acts that regulate the given field. We also attest to a reluctance on the part of public authorities to remove discrepancies and ensure the compatibility of normative acts.

Based on the above and given that the NAS are complex and do not meet the needs of financial institutions with financial autonomy, the aim of this work is to develop a methodology for recognition and accounting of revenue for public educational institutions, deriving from the content of the NAS and the particularities of the activities of these institutions.

The research results will be able to be used both in the practice of public institutions with financial autonomy, of entities in the field of education and research, and for didactic purposes.

## **BRIEF ANALYSIS OF BIBLIOGRAPHIC SOURCES IN THE FIELD OF THE RESEARCHED PROBLEM**

Revenue recognition and accounting is a topic of interest, intensely discussed in the literature, which is constantly evolving. Previous studies address [5], for the most part, the issue of revenue arising from the validity of accounting regulations at the time. However, the accounting regulations do not remain static, but are constantly improved and updated, introducing new provisions and requirements, which, in the end, cause both impediments and disputes related to their understanding, interpretation and implementation. An important determinant in the implementation of any new provisions is the specifics and particularities of the activities carried out. However, the subject of income recognition and accounting in public higher education institutions has particularities and creates disputes from the perspective of the application of national accounting regulations in this sector of the national economy. This topic is debated by a limited number of local scientific papers, but foreign studies [6, 7, 8, 9] do not address the issues of the institutions of this sector of the national economy, as they are different accounting systems.

Domestic studies in the field of income recognition and accounting in public higher education institutions can be divided into two categories: a category that addresses the problems of organizing accounting, including income recognition and accounting in public education institutions until their transition to NAS application (until in 2013) [4] and the second category, the one that addresses the issues arising from the provisions of the NAS (after 2013) [10].

However, the issues related to the recognition and accounting of income in public higher education institutions with financial autonomy are insufficiently addressed in the literature, and the complexity of the phenomenon requires continuous theoretical and methodological research in the field.

## **DESCRIPTION OF THE RESEARCH METHODS USED**

The scientific approach was based primarily on a content analysis of the local legislative and economic environment with reference to public educational institutions with financial autonomy. At the same time, general research methods were correlated in the research process. Of the general ones, content analysis, synthesis, induction and deduction were used.

## **THE RESULTS OBTAINED**

Although there are developments in improving the regulatory framework for financially public educational institutions, they still raise technical and operational issues for professionals.

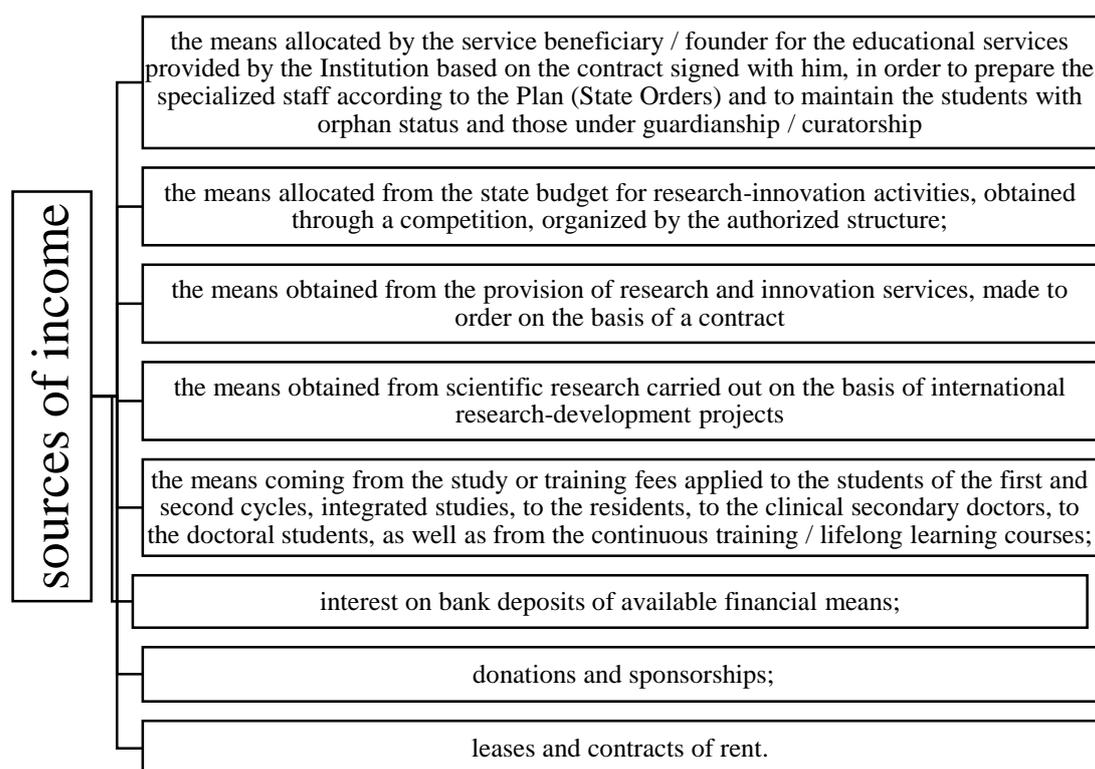
We consider a major shortcoming in the recognition of revenues to be inconsistencies or mismatches between the normative acts in force. Thus, we identify a discrepancy, first of all, of the term "income". However, according to NAS, income represents increases in economic benefits recorded during the management period, in the form of asset inflows or increases in value, or a decrease in liabilities that result in increases in equity, except for increases in owners' contributions. In the definition of income, the accrual accounting convention is observed, which considers that the effects of events and transactions are taken into account when they occur and not as cash is collected or paid. While, the Regulation on the formation and use of revenues collected by the authorities / institutions subordinated to the Ministry of Education, Culture and Research [11, art. 2] stipulates that the revenues of the institutions are formed from the financial means collected on their accounts from the execution of works and the provision of services, against payment, rent or lease of patrimony, donations, sponsorships and other money legally entered into possession of subordinate authorities / institutions subordinated to the Ministry of Education, Culture and Research. The definition expressly results from the application of the cash accounting principle, which is completely different from the accrual accounting principle, indicated to these institutions by Law 287/2017 and NAS. It is also important to reiterate that although public higher education institutions with financial autonomy have not been in line with the provisions of this regulation for more than 8 years, this regulation has not been updated with relevant stipulations and compliant with the regulatory framework for these institutions.

Outdated stipulations are perplexity, create confusion and produce violations of other normative acts in force. It is recommended to update that Regulation, based on the new conditions of activity, imposed on these institutions by other regulations.

Another discrepancy concerns the regulation on the functioning of state higher education institutions in conditions of financial autonomy [12], which stipulates that "the institution keeps the accounts in accordance with the Accounting Law no. 113-XVI of April 27, 2007 ". In the meantime, Law no. 287/2017 of accounting and financial reporting, which applies to all entities except the budgetary ones. The text of law 287/2017 shows that it also applies to public higher education institutions with financial autonomy. On the other hand, Law 113/2007 remained in force, did not undergo any updates or references to the new law, as well as some additional clear stipulations regarding the scope. However, we wonder what law these institutions should apply. Professional experience tells us that we must apply Law 217/2017 on accounting and financial reporting, or, the regulatory framework does not give us a firm answer. We recommend to the responsible public authorities the updating of the normative framework that belongs to them as subordinate attributions. And yet the

question that remains is, however, how exactly can the situation and performance of public higher education institutions with financial autonomy be determined? The answer can only be relative.

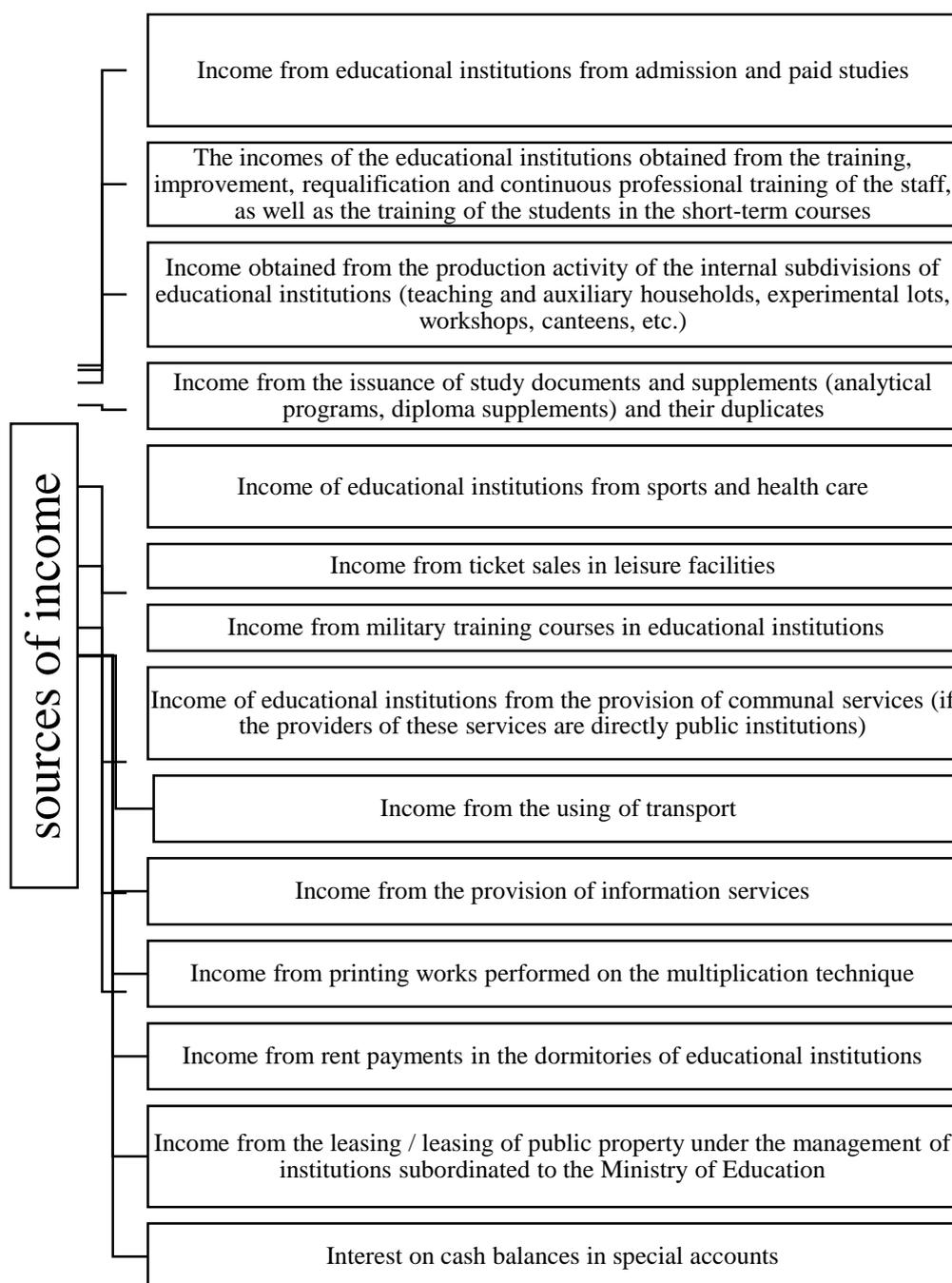
The series of discrepancies also includes the normative acts regarding the income sources of the public educational institutions with financial autonomy. Figure 1 shows the predetermined sources of income from the point of view of financial autonomy in accordance with the regulation on the functioning of state higher education institutions in conditions of financial autonomy [12, art. 26].



**Figure 1. Sources of income of state higher education institutions with financial autonomy**

*Developed by the author based on the provisions of the Regulation on the functioning of state higher education institutions in conditions of financial autonomy*

At the same time, the Regulation on the manner of formation and use of revenues collected by the authorities / institutions subordinated to the Ministry of Education, Culture and Research is applicable [11, chap. II], which also establishes the income nomenclature for the institutions subordinated to the MECR, presented in figure 2.



**Figure 2. Sources of income of state higher education institutions with financial autonomy**

*Prepared by the author based on the provisions of the Regulation on works and services against payment, the size of tariffs for services, the formation and use of revenues collected by the authorities / institutions subordinated to the Ministry of Education, Culture and Research*

Although both mentioned regulations regulate the formation of incomes in public educational institutions with financial autonomy, we notice both a quantitative and qualitative gap in the nomenclature of incomes, as well as the lack of a synchronization of income sources. Also some of the possible sources of income for public higher education institutions with financial autonomy are missing. The institutions concerned are confused as to the application of these rules, asking questions about the prevalence of the regulations, but also whether they can charge fees and include in their budget sources of revenue not specified in those regulations. For example, the fees for organizing and

participating in scientific conferences. We consider that the updating of the normative regulations for the public educational institutions with financial autonomy is a necessary measure for the Republic of Moldova, as a state that aspires to become a member of the European Union.

Public educational institutions with financial autonomy do not exist to make a profit, they work to ensure education, thus contributing to the well-being of society. The revenues of these public institutions are largely formed from the allocations transferred from the state budget for the study programs offered according to the Plan (State Orders) for the training of specialized staff and scientific research activities. Or, according to the provisions of the Education Code of the Republic of Moldova [13], the educational institutions receive financing from the state budget through the budgetary places granted annually by the Government within the admission plan. For example, the revenues from the state order for the Technical University of Moldova, according to the information presented on its official website, constitute in 2018 approximately 68%, and in 2019 approximately 71% of the total revenues. [14]. ASEM, according to the information present on its official website, reports in 2018 revenues from the State Order in the amount of approximately 44% of total revenues. [15]

Another important source of income is financial resources from paid studies. However, the development by public educational institutions of mechanisms for carrying out income-generating activities, on the one hand, complements the state guarantees regarding the possibility of obtaining higher education, and on the other hand creates conditions and incentives for increasing the efficiency of public institutions and their ability to operate independently in a market economy. For TUM the income from study fees constitutes approximately 11% of the total income in 2019 and approximately 8.6% in 2018 [14], while for ASEM the income from fees has a share of approximately 34% in 2018 [15].

In fact, these sources of income have recognition and accounting problems. Law on accounting and financial reporting 287/2017 [1, art. 3] defines the recognition as an accounting entry and the presentation in the financial statements of an accounting item that meets the definition and meets the recognition criteria set out in the accounting standards. For the definition, recognition and accounting of revenues, the NAS "Income" is applied. Therefore, according to NAS "Income", income is recognized when an increase in future economic benefits related to an increase in an asset or a decrease in a debt can be measured reliably. In fact, this means that the recognition of income is done simultaneously with the recognition of the increase in assets or the reduction of debts.

Since it is a question of recognizing income from the provision of services, we must not ignore the definition of revenue from the provision of services. Thus, according to NAS "Income", income from the provision of services represent the revenues from the execution by the entity of works over a certain period of time (for example, revenues from transport services, repairs, intermediation, consultancy, training, sports, equipment installation, telephony, internet, tourism). Many of us have wondered whether income from services and income from work are two synonymous terms. From the stated definition there is no attestation, from an accounting point of view, of a delimitation between the terms of services and works. The provision of services includes the execution of works and any other operations that cannot be considered deliveries of goods. This treatment is similar to international accounting regulations and accounting practice applied by companies in developed countries. We find the same approach in Romania, according to the Accounting Regulations compliant with the Fourth Directive of the European Economic Communities, the provision of services includes the execution of works and any other operations that cannot be considered deliveries of goods. From a territorial point of view, in some countries there are delimitations between services and works within their normative framework. For example, in Russia, services are delimited by

works. Or, by services are meant the activities whose results do not have material embodiment, are sold and consumed in the process of carrying out these activities [16, art. 38 (5)], and through works - the activities whose results have material embodiment and which can be sold [16, art. 38 (7)].

The definition of income identifies all its essential characteristics, but does not attempt to specify the criteria that must be met before they can be recognized in the financial statements.

Income from the provision of services is recognized in the event of the simultaneous fulfillment of several conditions, as follows.

- 1) the size of the income can be measured reliably;
- 2) the economic benefits related to the transaction are likely to be obtained by the entity;
- 3) the execution stage of the transaction at the reporting date can be credibly assessed; and
- 4) the costs incurred during the transaction and the costs of completing the transaction can be measured reliably.

So, if we have 4 affirmative answers we will recognize the income of the management period.

NAS "Income" prescribes that the recognition of revenues from the provision of services is carried out according to one of the following methods:

- 1) the method of full provision;
- 2) the method of completion percentage [art. 21].

The method of full provision is recommended in cases where the term of provision of services does not exceed a reporting period [2, art. 22]. For educational services lasting from a few months to several years, such a method is, of course, unacceptable, as it means a production cycle that lasts more than a reporting period, during which the institution has no income or expenses, consequently only records costs and services in progress.

However, the question remains open and may be discussed: when is the educational services provided considered? In our opinion, the educational services will be considered fully provided at the end of the entire period of studies, a process justified by granting the study completion document. But the peculiarity of educational services lies in the fact that the learner constantly receives knowledge by attending classes. At the same time, the unfinished studies are still some results of the services provided, as the student can continue the studies later or in another institution.

We could opt for the percentage of completion method, which is applicable in cases where the services, according to the same contract, are provided during several reporting periods [2, art. 2. 3]. However, the contract for the provision of educational services for a fee is concluded for the entire study period. Study fees are usually paid 1-2 times a year, and the learning process takes at least 3 academic years (several years of reporting). Based on them, such contracts fit the definition of long-term contracts, which goes beyond a management period.

According to NAS, the percentage completion method provides that revenues are recognized at distinct stages of the transaction, depending on the percentage completion, ie in the management periods in which the actual provision of services takes place. The recognition of income based on the percentage of completion method is allowed at the same time as the following conditions:

- 1) the moment of concluding the transaction or of a distinct stage of it can be determined with a high degree of certainty at the reporting date;
- 2) the expenses incurred in the process of the transaction and those necessary for its completion can be determined reliably.

These conditions or other similar procedures, which constitute applications of the recognition criteria, generally aim to limit the recognition as income to those elements that can be reliably

assessed and that have a sufficient degree of certainty. We support the hypothesis that the mentioned conditions can be observed in the case of providing educational services, ie we admit the practice of the percentage of completion method. Thus, the income from the provision of educational services for a fee should be reflected in deferred income, with the subsequent monthly settlement of the deferred income to the income from the current reporting period. What would be the best method for estimating and settling deferred income for the income of the reporting period?

NAS "Income" recommends that the amount of revenues, in case of applying the percentage of completion method, be determined based on one of the following procedures:

- 1) the actual volume of services provided;
- 2) the share of the effective volume of the services provided in the total volume of the services provided by the contract;
- 3) the share of expenses incurred on a predetermined date in the total expenses provided by the contract.

Analyzing the above-mentioned methods, we do not find adequate for educational institutions any variant of determining the incomes in case of providing educational services. However, cost is a general constraint that acts on the information that can be provided by financial reporting. Monthly revenue recognition using one of the three recommended methods incurs costs and it is important that these costs are justified by the benefits of reporting that information. To avoid cost-benefit constraints, we choose to recognize revenue from fee-based educational services using the straight-line method of early income settlement.

## **CONCLUSIONS / RECOMMENDATIONS**

The recognition of revenues according to the NAS for public higher education institutions with financial autonomy should be considered a revolution, which offers a number of advantages, but also a multitude of technical and operational problems. The research highlighted both the discrepancies between the normative acts governing the formation and recognition of income of public educational institutions with financial autonomy, and the deficiencies identified in the accounting recognition of income, submitting suggestions and recommendations for resolving these discrepancies and deficiencies.

Of course, the NAS for public educational institutions with financial autonomy, is, naturally, in a continuous process of adaptation and development, corresponding to the evolutions and requirements revealed in their practice, and this article has developed the methodology of recognition and accounting of income for public educational institutions, deriving from the content of the NAS and the particularities of the activity of these institutions.

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## INTERNAL GOVERNMENT DEBT OF THE REPUBLIC OF MOLDOVA: TRENDS AND PERSPECTIVES

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**Abstract:** *The government debt of a country represents its borrowing engagements in order to assure the financial resources necessary for implementing its functions related to the production and economic processes, social sphere and functioning of other domains of activity. At the same time, the government debt facilitates the conduct of monetary policy by public authorities aimed at maintaining a stable exchange rate of the national currency and maintaining the optimal level of inflation. Therefore, the government debt is one of the indicators and elements that characterize the financial stability of a country and is approached in different policy documents in order to assure and maintain its efficient management. In this context, this article aims to presents an analysis of the internal government debt of the Republic of Moldova for the last 4 years, its structure, evolution and trends as well as the perspectives and future plans of the Republic of Moldova's authorities in order to assure a high level of financing its needs in conditions of minimum risks. The research methods used in reflecting the obtained results are the analysis, synthesis comparison and graphic method.*

**Key words:** *government debt, internal government debt, government securities, primary market, treasury bills, government bonds.*

**JEL CLASSIFICATION:** F65, G23, G28, H63, O16

### INTRODUCTION

Due to its particularities, the government debt (GD) often acts as a barometer/ indicator for economic processes. In the best of times, it relaxes the domestic constraint on savings, smooths consumption, and finances investment. Investors see it as a safe haven, as an „alpha” and as a method of portfolio diversification. In the worst of times, it is associated with debt overhangs, banking collapses, exchange-rate crises and inflationary explosions. In such circumstances, the investors see it unenforceable, illiquid and prone to messy debt workouts.

Recurrent international financial crises have highlighted the need in developing internal debt markets to reduce dependence on foreign financing and vulnerability to volatility in international capital markets. Therefore, the development of internal government debt (IGD) markets became a priority for many emerging and developing countries as highlighted by the rapid growth of these markets. Thus, the main aspects that most of the countries, including the Republic of Moldova, have payed attention on for the past decade were improving the macroeconomic fundamentals, making structural reforms, implementing better debt management practices, diversifying the investor base and developing a functional and liquid secondary market.

## THE ANALYSIS OF BIBLIOGRAPHY RESOURCES RELATED TO THE SUBJECT

In researching this topic were studied different bibliography sources such as studies made by national researchers in this field, the legal framework of the Republic of Moldova related to public debt as well the reports drafted by international experts of the International Monetary Fund and the World Bank on public debt management.

## DESCRIPTION OF THE RESEARCH METHODS

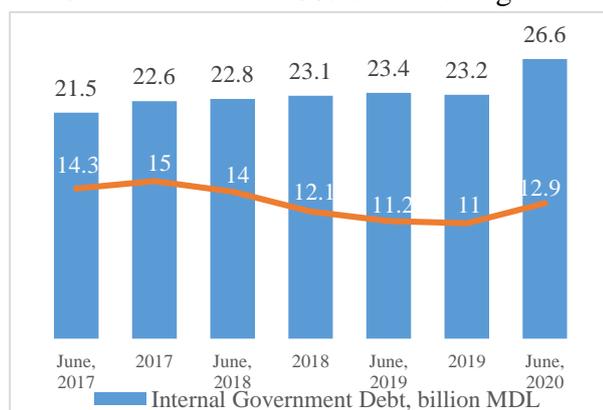
The applied research methods in this article consist in:

- the economic analysis method – which implies the decomposition, the breakdown of the investigated process into elements and therefore, the research of each element as part of a whole.
- the synthesis method presumes the unification in a logical and coherent manner of the fragmentary elements and of the information explored on the topic.
- the comparison method implies studying the processes and economic phenomena through a reference criterion, establishing similarities and differences.
- the graphic method used for evaluating and representing the statistical data.

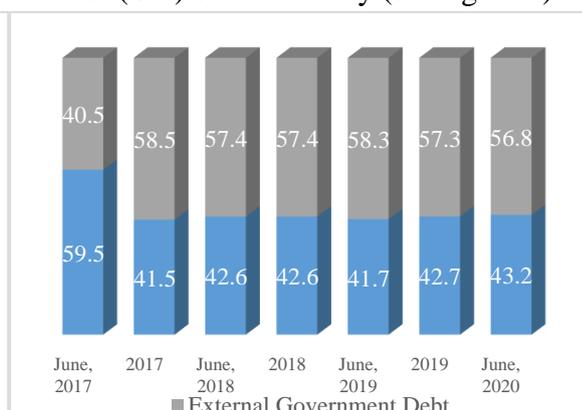
## THE OBTAINED RESULTS

According to the framework of the Republic of Moldova, the IGD represents the total amount of unpaid obligations and interest due and unpaid, contracted, on behalf of the Republic of Moldova, by the Government, through the Ministry of Finance, from residents of the Republic of Moldova. Government securities issued to be placed on the domestic market of the Republic of Moldova and purchased by non-residents is also attributed to the internal government debt [3].

The statistical data published by the Ministry of Finance of the Republic of Moldova, the responsible authority for the administration of the GD, show that as of June 2020 the IGD of the Republic of Moldova amounted about 26,6 billion MDL (see figure 1) and represents about 13% of the GDP and around 43% of the total government debt (GD) of the country (see figure 2).



**Figure 1. The amount of IGD of the Republic of Moldova for the period of 2017 – 2020**



**Figure 2. The structure of GD of the Republic of Moldova for the period of 2017 – 2020, %**

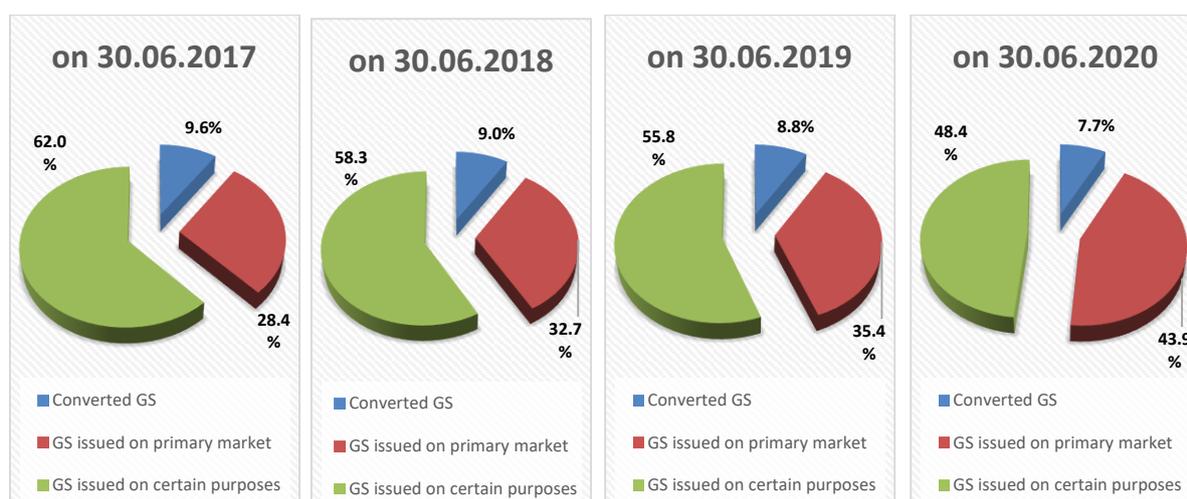
Source: Made by author based on data provided by the Ministry of Finance [5, 6]

For the entire period, from end, 2017 to mid, 2020, the IGD represents the minor part of the GD of the Republic of Moldova. However, the IGD registered in June 2020 has the highest amount in comparison to the previous periods that are shown in the figure 1.

As instruments generating IGD, in the Republic of Moldova may be applied such financial instruments like government securities (GS) and domestic government loans (loans from commercial banks and other domestic loans). The types of GS that may be issued on the primary market in Republic of Moldova are:

- Treasury bills - short-term GS, issued at a discount and redeemed at maturity at their nominal value, with a term of circulation of up to one year (91, 182 and 364 days).
- Government bonds - long-term GS, issued at a floating or fixed interest rate. Interest on government bonds is paid periodically (quarterly/ half-yearly) in the form of coupons. Government bonds can be sold at a discount, at their nominal price or at a premium, and are redeemed at maturity at their nominal value (from 1 year to 5 years) [2, 3].

Analyzing the statistical data published by the Ministry of Finance of Moldova, may be stated that the IGD of the Republic of Moldova, according to the data presented in Figure 3, consists entirely of GS.

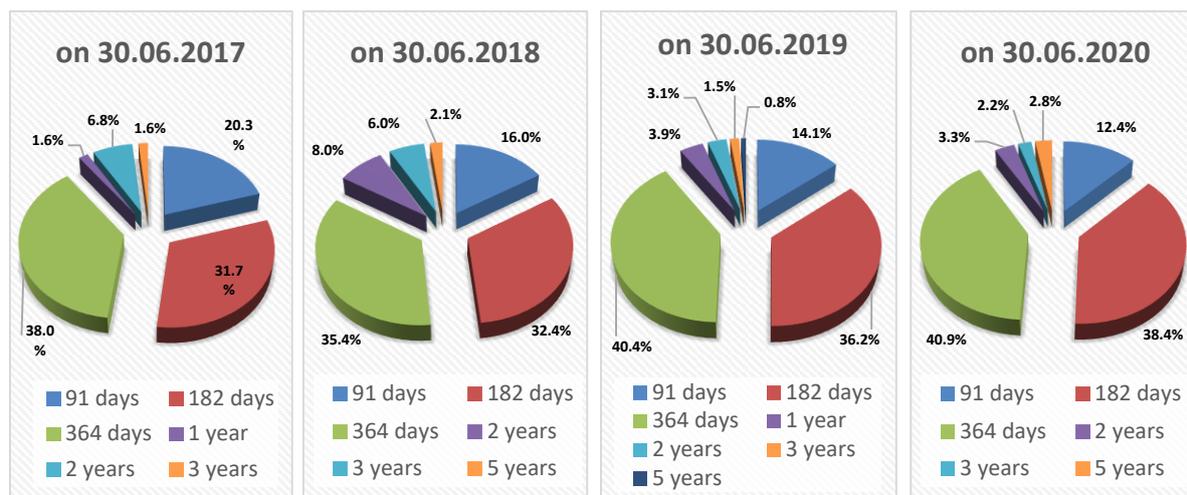


**Figure 3. The structure of IGD of the Republic of Moldova in the period of June 2017– June 2020, %**

Source: [2]

From the Figure 3, it can be mentioned that among the GS that form the IGD, most are GS issued for certain purposes set by law (48.4% as of June 30, 2020). These represent government bonds issued in order to execute the obligations of the Ministry of Finance of Moldova resulting from the state guarantees granted to the NBM for lending to commercial banks. On the second place, in terms of volume, are the GS issued on the primary market (about 44% as of June 30, 2020). At the same time, in 6 months of 2020 there is an increase (by 8.5 p.p.) of the share of GS issued on the primary market compared to the same period of 2019. A share of 7.7% of the total domestic government debt of Moldova are represented by converted GS, which are the GS obtained in the NBM portfolio following the conversion in 1998 and 2008 of the loans previously granted to the Government by the NBM.

Taking a closer look at IGD of the Republic of Moldova by the type of GS issued, it can be noticed that, it did not register significant changes during the analyzed period (2017-2020), and the most traded GS are represented by short-term GS (see Figure 4).



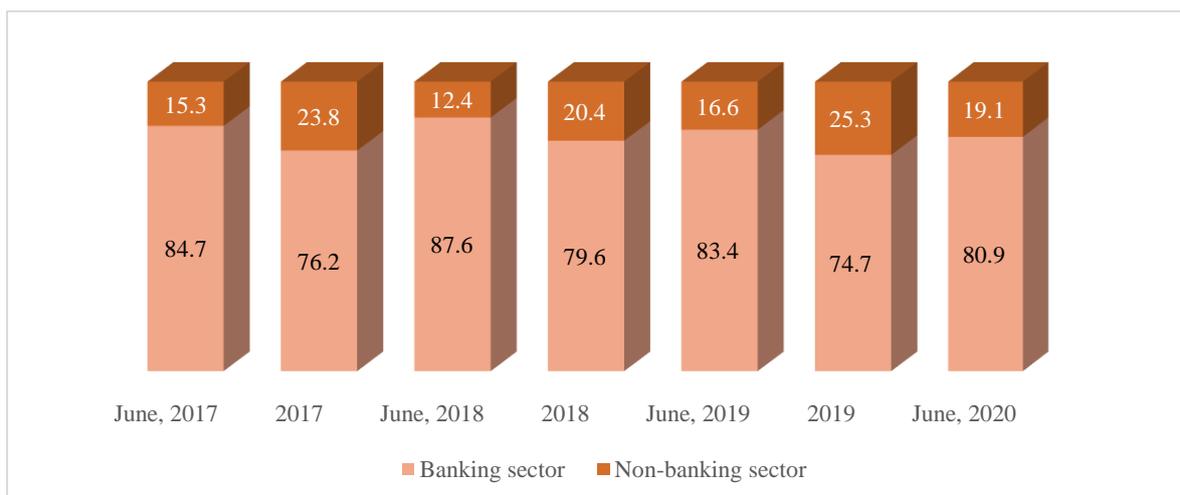
**Figure 4. The GS structure sold on the primary market of the Republic of Moldova in the period of June 2017– June 2020, %**

Source: [2]

Therefore, the treasury bills with a maturity of 364 days are ranked first in the category of the most requested short-term GS (approximately 41% of the total GS traded as of June 30, 2020), these being followed by those with a maturity of 182 days (about 38%) and 91 days (12%). Less requested GS, as of June 30, are government bonds with a maturity of 3 years, their share of the volume of GS traded in 6 months of 2020 being only 2.2 percent, which is an increase of 0,7 p.p. compared to the similar period of 2019, but also a significant reduction (with about 3 p.p.) compared to the period of 2017 - 2018.

An important moment to note is the fact that starting with 2018, the Ministry of Finance of the Republic of Moldova, as issuer of the GS, expanded the spectrum of proposed securities, by initiating the issuance of government bonds with a maturity of 5 years. The extension of the maturity term of the GS from 3 years to 5 years was aimed at expanding the maturity of the portfolio of government securities in circulation, as well as reducing the risk of domestic debt refinancing. As it can be seen from Figure 5, the share of government bonds with a maturity of 5 years traded in 6 months of the current year (a.2020) is relatively small, but which almost doubled compared to the similar period of the previous year.

Concerning the structure of IGD of the Republic of Moldova by the type of investors, it's important to mention that the major investor in GS is the banking sector (see figure 5).



**Figure 5. The IGD structure of the Republic of Moldova by the type of investors in the period of June 2017– June 2020, %**

Source: Made by author, based on [6]

As of 30<sup>th</sup> of June 2020, around 81% of the GS on the primary market are hold by the banking sector, and the rest of 19% - by the nonbanking sector, which is represented by national and international investors, that may purchase GS on the primary market through primary dealers.

Besides transactions on the primary market, the GS may be sold on the secondary market as well. According to the national law, transactions on the secondary market with GS are carried out under the following conditions:

- in the case of treasury bills - they take place only outside the regulated market (Stock Exchange) and outside of the multilateral trading system, through primary dealers and other authorized institutions;

- in the case of government bonds - take place both, outside the regulated market and outside the multilateral trading system through primary dealers, as well as on the regulated market and within the multilateral trading system, in accordance with the legislation in force.

The secondary market operates on the principle of direct trading and is organized through the single E-Bond trading platform and the Single Central Depository System of securities, where the trading of GS takes place after issuance on the primary market [2]. The trading platform was launched in October 2018 and in 15 months of activity (October 2018 – December 2019) it supported 56 transactions. The liquidity rate, calculated as the ratio between the total volume of monthly transactions on the secondary market and the total volume of GS in circulation, recorded less than 1.0% in this period of time, which attests an incipient level of this market's development.

However, on medium term, the Government of the Republic of Moldova expects to get resources for financing the budget deficit in an amount of about 6% from GDP (see table 1).

**Table 1. Internal financing planned for the period of 2020 - 2022**

Indicators	2020	2021	2022
GS on the primary market, % of GDP, from which:	5,8%	5,9%	6,0%
Treasury bills,%	85,0%	83,0%	80,5%
Government bonds, %	15,0%	17,0%	19,5%

Source: Made by the author based on [4]

At the same, the authorities intend to continue focusing all their efforts in developing and consolidating the internal market, both primary and secondary, by taking in the near future (till 2022) the following measures:

- the extension of the maturity of GS issued on the market and the gradual increase of the share of long-term GS in circulation;
- continuing in issuing government bonds with a maturity of: 2 years, with fixed and variable interest rate, 3 and 5 years, with fixed interest rate, and depending on market demand, the possibility of issuing government bonds with a maturity of 7 and 10 years, with a fixed interest rate;
- continuing the implementation of the E-Bond platform;
- increasing the individuals access to the purchase of GS as a tool for saving, and diversifying the channels for selling by supporting the development of a distribution program GS on electronic trading platforms.

## **CONCLUSIONS / RECOMMENDATIONS**

Even though the IGD is the minor part of the GD of the Republic of Moldova, its instruments provided on the local market represent a significant source of financing the public needs. Also, in order to respond to the investors needs, the authorities of the Republic of Moldova are concentrating all the efforts for developing and improving the existing instruments so that the state budget balance could be covered in the necessary amount and with low risks/ costs. However, improving the debt instruments is not sufficient. Selling most of the IGD instruments to the commercial local banks, makes it dependent on this category of investors and vulnerable. Therefore, the authorities should consolidate efforts in diversifying the investor's base as well, along with the debt instruments, which would minimize the concentration risks, rise the amount of attracted financial resources and reduce the financing costs.

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## RISKS OF INNOVATIONS ON THE BANKING MARKET

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**Abstract:** *In conditions where the world is digitalizing, and customers tend to seek for low friction and immediacy, banks also tend to transform. The most successful bank products don't need humans or physical assets. This is leading people to move away from the financial products people used to have in the past, to understanding that utility of financial institutions is now served not through products through a channel, but through a set of platform technologies that enable people to do banking. This shift comes along with new risks for customers. The goal of the article is to highlight the most common risks that come along with innovative bank products and their effects in case of occurrence. The conclusions presented in the article contain the ways the risks may be diminished.*

**Keywords:** *banking risk, innovation risk, operational risk, risk management.*

**JEL CLASSIFICATION :** E42, E 50, E 59, O3

### INTRODUCTION

The current period is characterized by fast paced innovations in the banking products market dictated by information and communication technology (ICT) progress, globalization, environmental changes in general and the interests of increasing the efficiency of banking. Under these conditions, the inherent risks specific to the banking activity also increase, innovations attributing new connotations to them. In the academic literature, the notion of risk is treated by several authors in different ways, starting from a general definition according to which risk is understood as "a spontaneous deviation from the expected course of events" (by Samuelson, Haek) [quoted after 1, p.78] and, continuing with definitions given by different authors for diverse types of banking risks, risks classifications, as well as methods and models for their assessment. In order to understand entirely the complexity and interdependence of banking risks it is necessary to identify the place of risks related to innovation process in the banking risk system and elucidate their possible influence on other risks. In this paper we intend to highlight the risks related to the innovation process and their place in the risk management, to establish the interdependence relationships, as well as the management level where risks are treated. The methods used in the research are the following: study the regulation and normative acts about banking risks, analysis and synthesis of the literature, induction and deduction, comparison, analogy, graphic method.

### THE RESULTS OBTAINED

The development of banks is determined by a myriad of events - risk factors, with implications for banking. Banking risk, in general, is defined by specialists in the field as "the value expression of a probable event, which can cause bank losses" [1, p. 79]; probability of occurring an event with adverse consequences for the subject [2, p. 10]. Banking risk is generated by the multitude of operations and procedures characteristic of banking. The risk accompanies every activity carried out

in the bank. Does it produce losses or not, it depends on the circumstances and the efficiency of the management. Depending on the level at which the risk is manifested, we distinguish: macro-, micro- and risks at the functional level (individual), at each level there is a set risk appetite.

There are 4 components that interfere when the bank risk is discussed: (figure 1):

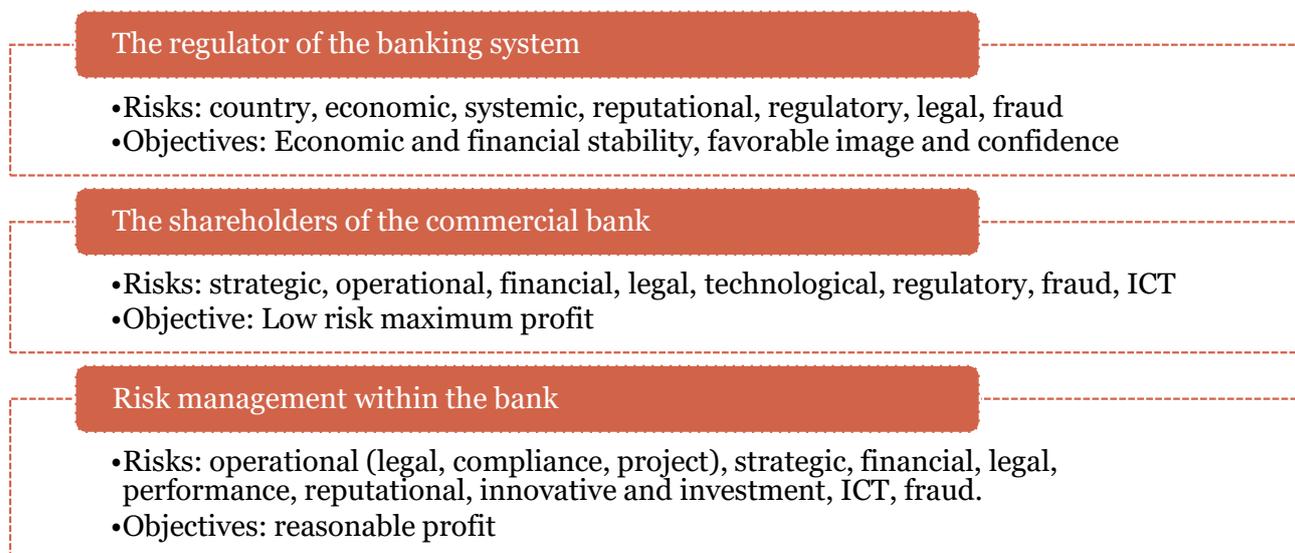


**Fig. 1. The relationship between risk components**

Source: adapted by the author according to the source Perfiliev, A.A. "Bankovskii menedjment", p.44

**I. The subject** - represent the decision-makers regarding the banking risk, and it contains the following elements (as described in figure 2):

- the regulator or the Central Bank with low risk appetite resulting from the role of ensuring the prudential supervision of commercial banks, by assessing the risk structure of assets and compliance with capital and solvency reserves, aiming at price and financial stability; the management of the commercial bank, which carries out the processes of an efficient risk management, aiming at a reasonable maximum profit;
- shareholders of commercial banks, which aim at maximum profit and low risks;
- managers of commercial banks on risks;



**Fig. 2. Bank risk subjects and their objectives**

Source: elaborated by the author

**II. Managerial decisions** (risk appetite) and risk culture at all levels;

**III. Losses** or the result of risk management;

**IV. Uncertainty** - a criterion of the severity of the risk, having a certain probability of occurrence. At the early stages of the innovation process, there is more uncertainty and higher risks due to a lack of information. By having better information in context, this uncertainty can be reduced which leads to better and speedier business decisions.

The notion of uncertainty is used as an indicator of the severity of risk in modern economic theory [1, p.79]. Uncertainty in innovation is related to the lack of similarities and can lead to maximum risk. However, both uncertainty and risk can be analyzed, measured and managed in order to make decisions to eliminate, mitigate possible adverse effects or transfer them to third parties (ex: risk insurance). The problem in this case consists in admitting the value of the admissible error in the measurement, the prediction of the long-term effects. The risk is measurable and the quantitative measure is the probability of a negative result [1, p.79]

The problem regarding the banking risks is addressed by many authors that try define, classify, identify interdependencies, evaluate and analyse solutions for their effective measurement, monitoring and control. Risks are also defined by the Basel Committee on Banking Supervision, which classifies them into: country risks, reputational risks, strategic risks, operational risks and financial risks, the latter including the four main types of risks: liquidity, market, credit and of capital (of bankruptcy) [4]. The legislation in force in the Republic of Moldova highlights and defines 15 types of risks [5]. For comparison, with reference to its business-process functions, the Central Bank of Russia indicates 9 types of risks, classified into financial and non-financial risks. Non-financial risks include strategic, reputational and operational risks, the latter taking the form of legal, compliance and project [6]. The financial risks are credit, market, liquidity risk. But in the academic literature, there are broader classifications. Thus, the literature also mentions such types of risks as: country risk, regulatory risk, legal risk (contractual), performance risk, environmental risks, competition, system, fiscal, possible risks related to events or force majeure, investment risk, cyber risk, fraud risk, etc. [2, p.11-14]. The thorough and reasonable broadening of the risks typologies, as well as the elaboration of the methodological and methodical basis for their monitoring, evaluation and efficient management can contribute to the increase of the banking performance. In the last 20 years worldwide, were set the foundations for the systematic approach to the risks specific to the financial-banking system, their evaluation, monitoring and control [7, p.100]. At the same time, we believe that a special place in this system must be given to the risks related to the innovation process, which are currently less treated. Banking innovation risk can be defined as probable losses related to unexpected events and deficiencies related to the realization of the innovation process. The higher the risks involved in the innovation activity, the higher the commercial success (profit), but the lower the probability of achieving a high profitability by the bank. The risk factors that can influence the innovation activity of banks can be both internal and external. Thus, the risks of banking innovations are determined by:

- particularities of the innovation process on the banking products market, as each stage involves certain risks depending on the type of innovation - product, process, regulation, ICT, etc.;
- collaborative and open character of innovation projects, which involve the participation of several entities in the innovation process - banks, institutions and organizations in the field

of ICT, international organizations in the field, marketing research institutions, etc., each of them totaling certain risks;

- the impossibility of predicting the results of innovation due to inadequate perception of innovation by partners and customers;
- low degree of readiness to purchase innovative banking products / services, low assimilation of new service technology, lack of experience and fear of the new;
- lack of a strong motivation for innovation and / or diminishing the real effects of innovation;
- lack of analogies and standards for carrying out innovation activities, which implies an emerging approach to the innovation process, especially related to ICT;
- faulty management of creativity and innovation process;
- incipient innovative marketing or traditional marketing approach.

The analysis of banking innovations globally shows that in this field innovative business models have been implemented, the main ones being illustrated in figure 3.

Field	Innovation	Goal	Result
Card projects	Debit cards as payment method	Safe payments, safe client on-boarding	The share of card fees in profits increased
Mortgage loans	Preferential rates, % calculation according to the credit balance	Increase the volume of loans, maintain past clients	Increase in profits due to mortgage loans
Stock market	Securities with new features	Extend the products range	Increase profits
Deposits	Combine current account with saving account, online accounts	Optimize expenses for accounts service, Expand possibilities for clients	Compensate the % with the low expenditure for service
Bank technologies	Automatisation, Internet banking, customer relations management	Improving quality of service, Delivering to customer priority services	Optimization of operational expenditure
Innovative business-models	Increase the price of the bank, enhance it's resilience.		

**Fig. 3. Global innovations - end of the century. XX beginning of the XXI century**

Source: Reference 8, p.24

In the process of implementing innovations, it is important for management to have a visionary capacity, taking into account the current situation and position of the bank, possible risks due to innovation and target strategic development objectives in current and future markets.

Banking innovations, as a product sold on the market of banking products / services, are characterized by virtual character, personalization, diversification / differentiation, interdependence, integration, convergence or divergence, being at the same time intangible and subject to moral wear. All these make it difficult to predict the effects of the innovation process, the evaluation of the new

banking product / service, its degree of novelty and the acceptance of innovation by customers, etc. Through their spontaneity, complexity and interdependence, unexpected events related to the innovation process can create very serious risk situations with disastrous effects, which require careful analysis and competent management. Most often, innovations generate operational risks, the action of which affects the loss of reputation, revenue, customers, etc. Innovation risks are also interdependent with credit, investment, market, cybernetic, legal, etc. risk, depending on the system of relating the components of the risk situation: partners, regulations, customers, environment, internal factors, etc. Practice shows that banking innovations can also cause systemic risks, economic crises. For example, some authors consider that the financial crisis of 2007-2009 is a consequence of the US implementation of innovations and their mismanagement. Also, the specialists in the field, at the IORWG conference in May 2019, appreciated that over 15 new risks appear with the implementation of cloud computing technology, including legal risk, risk of loss of information, loss of links, espionage, impossibility of total control, information leaks and so on. In this context, it is recommended to measure the risk appetite for new technologies and to outsource some banking functions to transfer the possible risks and tasks of ensuring business continuity, the presence of a strategy to get out of risk situations. Therefore, in situations where commercial banks' risk appetite for new technologies cannot be reduced, the main task is to monitor the effectiveness of residual risk response measures [7, p. 110] .

Given the fact that the innovation process is based on human creativity, encompassing all activities, we believe that innovation risks can intervene in the action of different types of risks, depending on where the innovation activity takes place - service delivery process, changing credit conditions, granting new types of loans, implementing innovative leasing, ICT, relational approach with customers, etc. Depending on the interdependence of innovation risks with other banking risks, we can highlight:

1. innovation risks unique to banking - innovations are naturally accompanied by these risks, for example an investment project involves strategic, investment and operational risk;
2. mitigative innovation risks: the risk component existing in the bank's activity is diminished or mitigated by innovations, for example, the implementation of the COREP / FINREP reporting framework will ensure the development of the banking sector by strengthening internal governance, maintaining adequate capital, both quantitatively and in terms of quality, and will boost the supply of safer and better quality financial services;
3. risks derived from innovations - the risk appears in the process of exploiting the innovation, for example the ICT risk;
4. fortifying innovation risks - innovation increases the size and significance of an existing risk, for example, a new technology will increase cyber risk.

Therefore, the risks related to the innovation process will be reflected in the other risks, for which there is the Assessment Methodology imposed by the Basel III requirements, which includes 29 principles, as well as theories, methods, models and econometric solutions of several authors, supplemented and continuously developed. It is important that the employees responsible for implementing the innovations are specialists in the fields of respective innovations (banking product / service, technology, management, etc.) able to promote innovations and predict the possible effects and risks of implementation in order to manage them as efficiently as possible.

## CONCLUSIONS

Innovations and the resulting risks can increase the performance and development of the bank or slow it down, causing damage. As innovations can refer to any aspect of the bank's activity, the risks related to them will generate the operational risks characteristic to that activity, enhancing or diminishing them, contributing to the triggering of the chain and other associated risks. At the current stage, the achievement of efficient innovation activity in the banking field requires the recognition not only of the importance of innovations, but also of the risks related to them. It is also necessary to train specialists - managers in the field of innovation and innovation risks able to promote innovations in the banking field and to carry out the efficient management of their risks.

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## FISCAL ASPECTS REGARDING THE INCOME TAX FROM PROFESSIONAL AND INDEPENDENT ACTIVITY

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**Abstract:** *In this research we will examine the fiscal aspects of the incomes obtained by persons carrying out independent professional activity through the prism of the tax legislations of different states, as well as the experience of the Republic of Moldova in this respect. In particular, we will investigate the issue of taxation of income obtained by these subjects in the context of the experience of states that have implemented certain classifications for professional and independent activities carried out by taxpayers in various fields of the economy. We will pay special attention to the history of the emergence of independent and professional activity, the taxation mechanism, as well as its evolution in different tax systems. At the same time, we will make an analysis of the concept of individual and professional activity, we will study its forms according to the provisions of the legislative acts that underlie their regulation and that form the legislative basis of an efficient regulation by the state. In this research we will formulate conclusions on the specifics of the application of the researched tax regime, at the same time, we will provide the optimal positions and recommendations of other researchers in the field regarding the mechanism of tax support for self-employed and professional activities.*

**Keywords:** *professional activity, independent activity, subject of taxation, tax rate, object of taxation, income tax.*

**JEL CLASSIFICATION: H21, H25, M41**

### INTRODUCTION

The importance of studying the tax aspects of income tax on professional and independent activity derives from the fact that recently the proportion of those who are self-employed has decreased compared to previous years, as can be seen from the figures recorded by the statistical body of the European Union. It is an indicator of the deterioration of the business environment and of the increased reluctance to start a self-employed activity, the so-called freelance. Beyond the importance of income tax as income paid to the state budget, the tax measures adopted with respect to self-employed persons should primarily contribute to minimizing unemployment, as well as increasing legal employment, which will inevitably favor the increase of revenues to the state budget.

This research should be carried out using methods of analysis and generalization of information sources, such as: legislative and regulatory acts of the Republic of Moldova (hereinafter Moldova), especially in the field of taxation, data and information officially declared by relevant institutions, scientific articles in this area, analysis and research, including using methods of comparison, induction and deduction, which would make possible to uncover the essence of the research topic.

## **BASIC CONTENT**

During its evolution, Republic of Moldova had offered citizens the opportunity to manifest their entrepreneurial skills both for their own benefit and for the benefit of economic development of the entire state. Such a possibility was favored especially with the transition from the socialist system to the market economy, to free competition. It is known that the socialist economic model, known as the socialist hypercentralist system, has failed, proving that the state-owned enterprise sector is not able to offer the chance to revive the economy. That is why entrepreneurship was at stake in the economic development of the state with the achievement of independence. Analyzing the research of American scientists Reynolds, Hay and Camp (1999), we find that they have shown that one third of the differences in the rate of economic growth is due to differences in the development of entrepreneurship in each state. (1, page 4).

Examining the evolution of economic changes with the abandonment of the socialist economic model, we find that on January 3, 1992 the Parliament of the Republic of Moldova adopted the law on entrepreneurship and enterprises, which regulated the notion of "entrepreneurship" as the activity of manufacturing production, execution of works and provision of services, carried out by citizens and their associations independently, on their own initiative, on their behalf, at their own risk and under their patrimonial responsibility in order to ensure a permanent source of income. (4) According to the provisions of the mentioned Law, it was established that any citizen of the Republic of Moldova can be an economic agent, and the organizational-legal form of the entrepreneurial activity is the enterprise, which can have the status of legal person and natural person. At the same time, both forms have the same rights and obligations, except for the patrimonial liability for their obligations.

At the same time, according to art.13 of the Law, it was established that the entrepreneurial activity can be practiced in the organizational-legal form of an individual enterprise, and the individual work activity has an entrepreneurial character and is practiced in the organizational-legal form of the individual enterprise. The organizational-legal form of individual enterprise, the manner of constitution and other aspects regarding its regulation are stipulated in art. 14 of the Law.

According to the tax legislation during the first steps of independence of the Republic of Moldova, namely according to the provisions of Article 1 paragraph (5) of the Law on corporate income tax (2), economic agents - individuals were subject to taxation under the Law on personal income tax (3).

Thus, according to the provisions of the Law on personal income tax, one of the categories of taxable income of individuals is the income obtained by individuals who carry out entrepreneurial activity and other activities that are not related to the fulfillment of work obligations. According to art.7 paragraph (9) of the respective Law, the amounts of the annual tax on the incomes of natural persons carrying out entrepreneurial activity and other activities that are not related to the fulfillment of work obligations are calculated by the fiscal bodies within 2 months from the presentation date, according to the legislation in force, of the declaration on the income obtained and the expenses related to obtaining this income. The tax is calculated from the average monthly income according to the rates in the annex to the Law and is multiplied by the number of months worked. The fiscal legislation at that stage provided for 5 income tax rates for individuals engaged in entrepreneurial activity. (Table no.1).

**Table 1. Personal income tax rates starting with 01.01.1993**

Nr.	Monthly taxable income	Tax rate
1	up to 10 minimum wages	10% of the amount of taxable income
2	from 10 to 20 minimum wages	20% of the amount exceeding 10 minimum wages
3	from 20 to 30 minimum wages	30% of the amount exceeding 20 minimum wages
4	from 30 to 50 minimum wages	40% of the amount exceeding 30 minimum wages
5	over 50 minimum wages	50% of the amount exceeding 50 minimum wages

At the same time, it is objective and correct to state that the implemented socialist economic model has gone through different stages in its evolution, including known forms of entrepreneurship. Thus, in the distant year 1986, on November 19, progress took place - the USSR Law "On Individual Labor Activity" appeared which laid the foundations of entrepreneurship in a country where everything was built on socialist stereotypes and collectivism. According to the new changes, the notion of entrepreneurship did not have a concrete definition, this being the incipient stage of emergence of this economic form, which is why entrepreneurs were popularly called "cooperators" because they organized cooperatives in which they carried out their activities. Subsequently, on April 2, 1991, the new Law on "General Principles of Entrepreneurship of Citizens of the USSR" entered into force in the USSR, where, in fact, the first abbreviations appeared, as people were involved in entrepreneurship (24).

Thus, they were the basis of Soviet entrepreneurship, the concept that was first introduced in the USSR and lasted between 1986 and 1991, and which at its core, fully declared only the ability to work "for yourself."

If we look further into the previous periods, with the adoption of the USSR constitution in October 1977, the right of the citizens of the USSR to self-employment was enshrined, which fully corresponded to global and internal trends. In the developed countries of that period, labor law extended more and more to professions, respectively professional activities, without the need to establish legal or natural persons, these being seen only from the point of view of economic, creative and professional interests, ie from the perspective of personal interests (23, page 138).

With respect to the western states, we can refer to the crisis of the late twentieth century, when the process of industrial restructuring, rising unemployment and exacerbation of social tensions took place in many countries, and the state was looking for new tools to ease social tension and help reduce the budget burden. In such circumstances, the form of self-employment emerged, as a result of the transition of individual entrepreneurship to so-called independent professional activities. This form of economic and legal organization referred to self-employed citizens in order to obtain a regular income without involving employed workers. Another interpretation of this activity is limited to the activity of ensuring vital necessities, working independently of the employer or acting as a specialist in a free profession (artist, writer, craftsman, etc.).

Thus, during the years 1970-1980 in Europe, each state created various support programs to develop independent activities, by stimulating the creation of individual enterprises by the unemployed, providing technical assistance, credit resources, subsidies and benefits, as well as support in the form of consultations, services and practical exercises. At the same time, the structure and mechanisms used to implement programs involving the unemployed in self-employment differ from state to state, but the characteristics are common: aiming the target groups of the unemployed, complex financial support measures, obtaining qualifications and work skills. At the same time, all self-employed development programs include monitoring support measures for technical and

financial assistance, as well as evaluating the effectiveness and efficiency of the programs. Gradually, national self-employment programs were supported in the mid-1980s not only in European countries such as Belgium, Denmark, Finland, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, but also in Australia and Canada (22, page 145-146).

Returning to the professional activities in the Republic of Moldova, at present, they can be found in the Classifier of Activities in the Economy of Moldova, Rev.2, (CAEM-2) (hereinafter Classifier), which is the basis for collecting and providing a wide range of statistical data by types of economic activities in the field of economic statistics, for example: production, occupation, national accounts, and other fields of statistics. The classifier was approved by the Decision of the College of the National Bureau of Statistics no. 20 dated 29.12.2009, being applied starting with January 1, 2014 and updated according to the Order of the National Bureau of Statistics no.28 dated 07.05.2019, being applied starting with May 7, 2019. It should be mentioned that the Classifier is fully harmonized with the Statistical Classification of Economic Activities in the European Community (NACE, 2nd revision) and provides a 1:1 ratio. Statistical data obtained on the basis of CAEM-2 are comparable at European level and, in general, worldwide, its use in the national statistical system is mandatory. Thus, in accordance with the mentioned Classifier, the professional activities in the Republic of Moldova, arranged by division and group, are classified as follows in the table below.

**Table 2. Professional, scientific and technical activities**

<b>The division</b>	<b>Group</b>	<b>Name</b>
<b>69</b>		Legal and accounting activities
	69.1	Legal activities
	69.2	Accounting and financial audit activities; tax consultancy
<b>70</b>		Activities of centralized administrative departments; management and management consultancy activities
	70.1	Activities of centralized administrative departments
	70.2	Management consultancy activities
<b>71</b>		Architectural and engineering activities; testing and technical analysis activities
	71.1	Architectural, engineering and related technical consultancy services
	71.2	Testing and technical analysis activities
<b>72</b>		Research and Development
	72.1	Research and development in natural sciences and engineering
	72.2	Research and development in social sciences and humanities
<b>73</b>		Advertising and market research activities
	73.1	Advertisement
	73.2	Market research and public opinion polling activities
<b>74</b>		Other professional, scientific and technical activities
	74.1	Specialized design activities
	74.2	Photographic activities
	74.3	Written and oral translation activities (interpreters)
	74.9	Other professional, scientific and technical activities n.c.a.
<b>75</b>		Veterinary activities

The classifier does not make distinctions according to the form of ownership, the legal form and the character of the activity of the productive unit, because such criteria are not related to the characteristics of the activity itself. Thus, the aspect regarding the classification according to the form of private or public property, according to the form of organization or legal structure natural or legal person or according to the working principle does not constitute the object of the respective Classifier.

With reference to the provisions of the legislation in force, the relations in the matter of entrepreneurship, regardless of the form of ownership and type of activity, are regulated by the Law on Entrepreneurship and Enterprises, by civil legislation and other laws (4, art.5 para. (1)). At the same time, the legislation in force of the Republic of Moldova establishes other legislative acts that regulate the legal, organizational, economic and social bases regarding the establishment, reorganization and liquidation of organizational-legal forms with the legal status of natural person practicing individual or professional activity, such as : the law on individual entrepreneurs (5), the law on peasant (farmer) households (6), the law on the regulation of the activity of lawyer (7), the law on notarial activity (8), the law on the activity of the bailiff (9), the law on the activity of interpreter and translator in the justice sector (10), as well as other legislative acts.

Regarding the aspects of taxation, the provisions of the Tax Code, establish several tax regimes regarding certain independent and professional activities carried out by natural persons. Thus, the provisions of Chapter 10<sup>1</sup> of the Tax Code regulate the taxation of persons carrying out professional activity in the justice sector and in the field of health. According to art.69<sup>1</sup> and 69<sup>2</sup> of the Tax Code, subjects of taxation are persons who carry out professional activity in justice and healthcare, and the object of taxation is the taxable income obtained by the subject of taxation from the professional activity in that field during the tax period. Individual taxpayers apply in this case cash accounting in accordance with art. 44 para. (2) of the Tax Code.

The persons concerned, when carrying out their professional activity in the respective sector, are allowed to deduct the expenses related to the professional activity paid or incurred during the tax period, in accordance with the provisions of chap. 3 of Title II of the Tax Code. Also, the persons who carry out professional activity in the justice sector benefit from the right to exemptions and other deductions according to the provisions of chap. 4 of Title II of the Tax Code. The calculation of income tax is performed by applying the tax rate of 18% on taxable income obtained from the respective professional activity, which is calculated annually and paid in installments, quarterly, until the 25th of the month following the corresponding quarter. The following tax return forms have been approved for these two types of professional activities: Income tax return for persons carrying out professional activity in the field of justice (Form DAJ17) (18) and Income tax return for persons carrying out professional activity in healthcare (Form DASS19) (19).

A new simplified tax regime has been introduced in the tax legislation starting with January 1, 2017 (11). According to the respective amendments, a new chapter has been introduced - Chapter 10<sup>2</sup>: the fiscal regime of the self-employed natural persons. At the same time, a new notion was introduced in General notions of art. 5 of the Tax Code, namely point 36<sup>1</sup>), according to which *independent activities* represent trade activities carried out by a resident individual only individually, without constituting an organizational-legal form, following the performing of which income is obtained. Thus, the tax legislation has been supplemented by a new simplified tax regime, which applies only to independent activities carried out in the field of retail trade (except excise goods), by a resident natural person who operates only individually, without constituting an organizational-legal form, as a result of the performed activity the person can obtain income.

The researched tax regime contributed to the evolution of the taxation system regarding the taxation of the incomes of natural persons, subjects of independent activity carried out in the field of retail trade, which comes with new approaches in this direction. This regime establishes conditions specific to the activity in question, and encourages taxpayers to apply it in practice, to benefit from the offered facilities, which will contribute to the transparency of this area for a more efficient tax

administration, will offer the possibility to bring an increasing number of taxpayers in the legal framework, and will stimulate progressive contribution on budget revenues, respectively.

The object of taxation is the income from independent activities obtained in the fiscal period of declaration in an amount not exceeding 600000 lei in a fiscal period. The rate established for these incomes constitutes 1% of the object of taxation, but not less than 3000 lei annually. For taxpayers who initiate or cease their activity during the fiscal period, the calculation of income tax is performed by applying the income tax rate from independent activities, which cannot be less than 250 lei for each month during which the person was registered as a subject of taxation of self-employment.

The tax is calculated annually by submitting the Declaration on income tax of the self-employed natural person (Form AI17) (17, Annex 4). The payment of the tax to the budget is made in installments, quarterly, until the 25th of the month following the corresponding quarter to the treasury income account of the administrative-territorial unit according to the domicile / residence address of the taxpayer.

At the same time, the legislator also provided certain facilities, such as exemption from local taxes, namely, payment of land use tax and tax for commercial units and / or services, the right to reduce the amount of income tax due in the first fiscal period with the amount of expenses supported for the purchase of cash registers used in the activity.

It should also be noted that the new regime offers the possibility to register this activity by simply submitting an application by the taxpayer to the subdivision of the State Tax Service, which offers the right to operate in that field starting with the date of submission. The application for registration of the activity must be accompanied by a copy of the receipt of the notification regarding the initiation of the trade activity. (12, art. 13–17<sup>9</sup>).

Starting with *June 10, 2016*, with the publication in the Official Monitor of the Law on information technology parks, the legislator created the necessary premises for the development of activities in the field of information technology (13). According to art. 2 of the mentioned Law, the subject of the entrepreneurial activity can also be a natural person as the subject of the entrepreneurial activity, called the resident of the park. The main activities carried out by informational park residents are specified in art. 8 of the mentioned Law, in accordance with the Classifier of Activities in the Economy of Moldova - 2 (CAEM rev.2) and the Statistical Classifier of products (goods and services) of the Republic of Moldova (2 revision), and are related to information technology activities. At the same time, on August 4, 2017, the amendment to the Tax Code was published, introducing Title X - Other tax regimes, Chapter 1 Tax regime of information technology park residents. According to these changes, the notion of *single tax* was introduced in the fiscal legislation, being defined as an amount due monthly to the budget by the residents of information technology parks according to art.15 of Law no.77 / 2016 on information technology parks. At the same time, according to art.368 of the Tax Code, it is established that subjects of single taxation are any legal and natural persons registered in the Republic of Moldova as subjects of entrepreneurial activity and who cumulatively meet the conditions specified in the legislation on information technology parks.

The object of taxation with single tax is the income from sales. For the natural person who acts as the founder of the individual enterprise, the single tax constitutes 7% of the object of taxation. Considering that the natural person cannot work as an employee of the individual enterprise where they are registered as founder, the minimum amount of single tax determined monthly for each employee in the amount of 30% of the average monthly salary per economy according to art.370 para. (2) of the Tax Code, is not mandatory in this case. An important fiscal aspect is the fact that, in that the single tax is

composed of taxes, fees and contributions, as follows: the income tax from the entrepreneurial activity; payroll income tax; compulsory state social insurance contributions due by employees and employers; compulsory health insurance contributions due by employees and employers; local taxes; the tax on real estate and the tax for the use of roads by motor vehicles registered in the Republic of Moldova. The single tax is determined monthly, and its calculation and reporting is performed by park residents until the 25th of the month following the month of submission to the State Tax Service of the Declaration on the single tax (Form IU17) (14, annex 1). At the same time, the residents of the information technology parks with the status of natural person (individual entrepreneurs) will not include in the annual declaration on the income tax of the natural person the income obtained from the activity carried out in the park. The registration of park residents is carried out by its Administration in accordance with the Regulation of park residents registration, approved by the Government, which expressly and exhaustively indicates the registration procedure and requirements, as well as the model of the contract for activity in the park for a period of at least 4 years.

Another tax regime approved and implemented starting with *January 1, 2020* refers to the activity of acquisition of phytotechnical products, horticulture and / or objects of the vegetal kingdom. The respective tax regime gives the possibility to the natural persons to legalize their activities of acquisition / commercialization of the agricultural production, which favors the bringing within the legal framework of an activity that has expanded rapidly in the last years. In this regard, the Tax Code was supplemented by Chapter 10<sup>3</sup> - "Tax regime of individuals engaged in activities in the field of procurement of plant protection products and / or horticulture and / or objects of the plant kingdom", which regulates the purpose, the subject the regime, the object of the regime, the methods of evidence, the applied tax regime, as well as the procedure of registration and evidence of the subjects of the regime in question. The subjects of the taxation of the mentioned regime are the resident natural persons, called collectors who, without constituting an organizational-legal form for carrying out the activity (it is not necessary to register a Limited Liability Company (LLC), Individual Enterprise, etc.), purchase phytotechnical products from citizens, for the purpose of selling of the purchased products to companies.

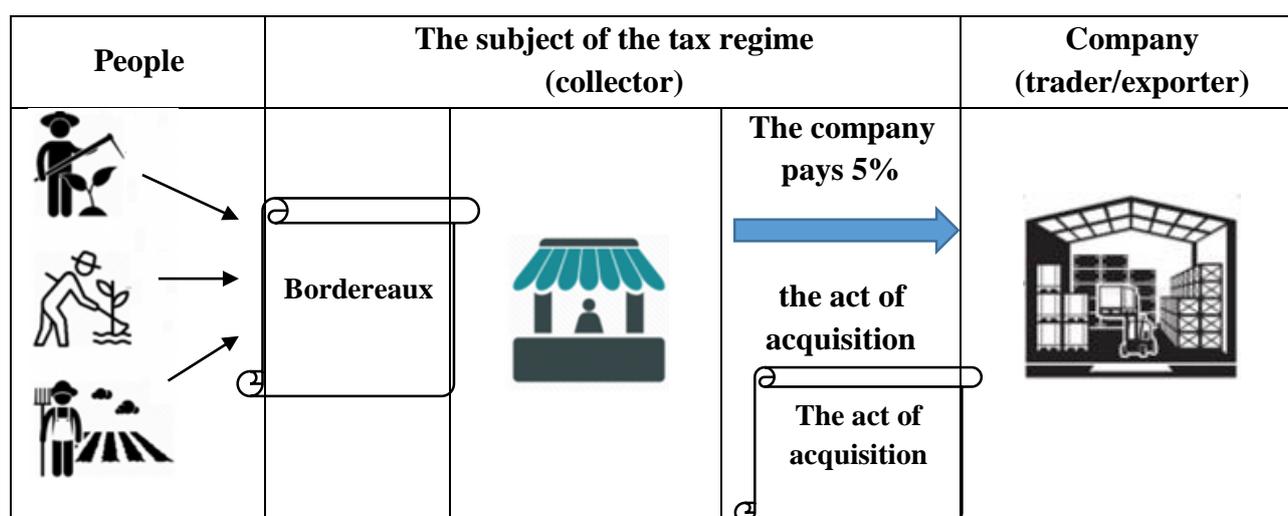
The object of the tax is the income obtained by natural person from the sale of phytotechnical and / or horticultural products and / or of the objects of the vegetal kingdom to the economic agent. At the same time, we mention that the provisions of chapter 10<sup>3</sup> of the Tax Code stipulate that the mentioned income must not exceed the amount of 1.2 million lei during the calendar year, this would mean that the value of products sold to companies annually (from January 1 to as of December 31) must not exceed the amount of 1.2 million lei.

The simple way of registering the resident natural persons who intend to carry out the respective activity is made by submitting to the State Tax Service an application form regarding the tax registration. Subsequently, within 3 working days from the submission of the application, the STS issues to the natural person the confirmation regarding the fiscal registration and the Purchase Schedule of the phytotechnical and / or horticulture production and / or the objects of the vegetal kingdom, with the annex of the application form and the copy of said confirmation to the taxpayer's file in order to ensure the record of his activity (20, point 3 of the Regulation).

An important aspect is the fact that the subjects of this tax regime are exempted from the obligation to present the fiscal reports related to the incomes obtained from this activity, as well as from the presentation of the financial and statistical reports, they are exempted from keeping accounting and financial records and exempted from the obligation to document the quantity and

place of purchase of products from individuals on the basis of the purchase schedule of production in phytotechnics and / or horticulture and / or objects of the plant kingdom (15, annex).

As regards the method of calculating the respective income tax, we mention that the respective obligation belongs to the economic agent that procures from the mentioned subjects products of phytotechnics and / or horticulture and / or objects of the vegetal kingdom, and this is done by withholding at the source of payment of the tax established in the amount of 5% of the payments made for the benefit of the subject. At the same time, when purchasing the respective goods from the collector, the companies are to draw up a deed of acquisition of the goods (16, standard form). The taxation process for the researched regime is presented schematically, as follows:



**Figure 1: Schematic reflection of the taxation process**

Source: Periodical publication „Monitorul Fiscal FISC.MD”

[https://monitorul.fisc.md/documents\\_comments/noul-regim-fiscal-pentru-persoanele-fizice-care-colecteaza-produse-agricole-si-sau-obiecte-ale-regnului-vegetal-si-le-comercializeaza-agentilor-economici.html](https://monitorul.fisc.md/documents_comments/noul-regim-fiscal-pentru-persoanele-fizice-care-colecteaza-produse-agricole-si-sau-obiecte-ale-regnului-vegetal-si-le-comercializeaza-agentilor-economici.html)

According to art.69<sup>18</sup> paragraph (3) of the Tax Code, the payment to the state budget of the tax withheld by the economic agent from the payments made for the benefit of collectors is to be made until the 25th of the month following the month in which the payments were made.

Thus, we establish that the natural person, subject of the regime in question is exempted from the obligation to report and pay the income tax obtained from this activity.

The ongoing trend to stimulate the development of professional and independent activities by creating various specialized support programs, focused primarily on people capable of doing business, has been highlighted in recent years in many countries. For example, the Russian Federation is currently adjusting the legal framework to formalize the legal status of the so-called “self-employed”, who are self-employed citizens based solely on their own participation in various fields, such as: private lessons; sitters; hairdressers; manicure specialists; dressmakers; citizens selling fruit, berries, independently grown vegetable products; photo operators; confectionery; drivers; freelance editors; journalists; masseurs working at home; jewelry restoration specialists; specialists in the repair and renovation of computers or household appliances that come to the customer's home; people who rent real estate.

Legislative measures adopted in relation to self-employed and self-employed citizens are essentially aimed at increasing tax collection. At the same time, the experience of other states in regulating the so-called "self-employed" activities indicate that direct tax collections do not show an increasing trend, however, the problem of unemployment is solved and, consequently, the labor market develops (21).

At the same time, it is important to highlight the tax approach in support programs, in terms of tax regimes, facilities, exemptions and other tax instruments offered to individuals to carry out professional and independent activities, including stimulation of the taxpayer to work legally and with favorable prospects for the development of the activity in this field.

In the context of the pandemic situation, when part of the companies encountered certain difficulties when forced to operate remotely, and part of the employees showed ingenuity towards the development of the field of freelance, including more activities performed at home, there is a growing need to supplement tax legislation with new tax regimes to protect this wide range of professional activities performed individually.

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## REGULATORY POLICIES AND INSTRUMENTS FOR ENSURING SYSTEMIC FINANCIAL STABILITY WITH AN IMPACT ON ECONOMIC PERFORMANCE IN EUROPEAN COUNTRIES AND IN THE REPUBLIC OF MOLDOVA

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***Abstract.** Financial stability is an attribute of the financial system to deal with various systemic shocks in a solid and sustainable way on a sustainable basis and without affecting decisively, to be able to ensure sufficient allocation of financial resources in the economy and to identify and to effectively reduce financial risks.*

***Key words:** financial institution, objectives of financial supervision, performance of supervision, financial supervision, financial system.*

**JEL CLASSIFICATION: G300,G320,G380**

### INTRODUCTION

The intensification of the globalization process has led to profound transformations of financial systems under the influence of the strong technological innovation movement and market liberalization. The capital is constantly circulating in more sophisticated forms on globally integrated markets. In the long term, this development favors the allocation of increased capital efficiency, contributes to reducing the volatility of economic activity and facilitates the progress of emerging economies. At the same time, globalization has led to an increase in the frequency of financial crises. Thus, the financial sphere is imposed on destabilizing tensions and movements, generating risks for both the financial system and the economy as a whole. The main factors of globalization, associated with the emergence of financial crises, were the fixed currency regimes and the regulatory process.

Ensuring systemic financial stability has become a priority objective for authorities, as important as monetary stability and the guarantee of sound economic growth. The analysis of financial stability has become reality in the context of increasing interdependencies between markets and financial and non-financial institutions, the emergence of new financial instruments and the intensification of international capital flows.

The issue of maintaining financial stability becomes a very important and current one all over the world and in the Republic of Moldova, which is in the process of developing financially more quickly and is part of the international financial structure and international financial markets. That is why in order to promote sustainable economic growth in the Republic of Moldova, account must be taken of the relationship and factors that can affect financial stability and generate financial instability, respectively.

The objective of this article is to identify systemic risks and macro-prudential policies in order to safeguard the stability of the financial system in its integrity. The basic content of the article

investigated is it is safeguarding financial stability by strengthening the ability of the financial system to withstand shocks and by reducing systemic risks, ensuring a sustainable contribution of the financial system to economic growth. the concept of financial stability and the analysis of the phenomena leading to the emergence and disruption of financial stability, investigated prudent supervisory and regulatory activities of the financial system, and the role of the central bank in ensuring financial stability.

## **ANALYSIS OF BIBLIOGRAPHIC SOURCES IN THE FIELD OF RESEARCHED MATTER**

The bibliography contains a list of 4 bibliographic sources used in the article. Financial stability is a key condition for the functioning of the national economy and can be defined as a situation in the economy, characterized by the lack of imbalances that could cause a negative correction of financial markets, the onset of a systemic financial crisis or the inability of financial institutions to maintain the uniform execution of financial operations. Financial stability is maintained by adequate regulation of current and potential risks, by efficient management of risk management and redistribution mechanisms and by ensuring the population's confidence in the financial system.

Financial stability means more than just the absence of crises. The financial system can be considered stable if it facilitates the efficient allocation of economic resources, both geographically and in time, as well as ensuring the continuity of all financial and economic processes:

1. Evaluates, trains and negotiates prices for financial assets, allocates and manages financial risks;
2. Maintains the ability to perform the key functions mentioned above, even when faced with external shocks or accumulation of financial imbalances.

Thus, because the financial system comprises a number of infrastructure components, different in meaning, but interconnected, institutions and markets - destabilizing one of the components could undermine the stability of the entire system.

## **DESCRIPTION OF THE RESEARCH METHODS USED**

In order to achieve the research objective, the following research methods were used: the method of systemic analysis that was used to research the elements and factors that characterize a stable financial system; the descriptive method used to expose the concepts of financial stability; the method of synthesis to establish the links between phenomena, including between globalization and financial stability, between different factors and constituents that influence systemic financial stability; the deduction method used to draw conclusions.

**THE MAIN RESULTS OF THE RESEARCH** consist of the analysis of the regulatory policies and instruments for ensuring financial stability of the concepts of systemic financial stability, the identification of the risks with major influence on the financial stability and of the instruments for the prevention of financial instability, the study of the regulatory framework at European and national level. field, identifying the institutions with responsibilities in the prudent regulation of the financial sector, formulating the findings and conclusions regarding ensuring financial stability.

## **OBTAINED RESULTS**

The globalization of financial institutions has complex implications for financial stability. From the point of view of individual institutions, globalization contributes to the diversification of risks and may equally succeed in improving financial stability, especially in the face of relatively small shocks. But, as national economies become part of a vast network of balance sheets, often strongly interconnected through the financial sector, severe crises in the future could be much easier to spread across borders and thus may become broader and more difficult to manage. For example, financial systems with a substantial foreign presence may be more resilient and more flexible under traditional domestic banking crises, but more vulnerable to external shocks affecting parent banks. In general, financial instability in one country can easily spread to other countries or affect developments in regional or global markets, as was the case, for example, during the crises in Asia and Russia in the late 1990s, but also the recent international financial crisis that started in 2007 in the United States and the United Kingdom.

The analysis of the financial crises produced so far at global, regional and national level shows that they are changing in nature. The crises of the late 1990s, produced in emerging markets, were largely financial and capital account crises, caused by sudden changes in the allocation of global assets rather than budgetary or current account crises, caused by trade shocks or tax.

The distinguishing feature of the global crisis of 2007 is that it comes from advanced economies and not from the failed policies promoted in developing countries. On the contrary, the economic policies and macroeconomic positions of the developing countries were at least the moment of the crisis, stronger than those promoted 10 years ago. However, the recession in developed countries severely tests the quality of economic policies and institutions in developing countries and conditions a drastic reduction in economic growth in 2009 through a variety of channels.

What distinguishes these events from the episodes of the past is the speed and amplitude at which they propagate both internally and cross-border. Efforts to prevent these phenomena require new directions in financial supervision, which will identify networks complexes of interconnected balance sheets and to focus on the external effects of financial market disruptions both between countries and between the real and financial sector.

One of the most important conclusions reached after the crisis of the early 1990s and the crisis that began in 2007, also formulated in the IMF and World Bank Reports, is that financial systems by definition are unstable and therefore financial stability must be continuously monitored and managed, the problems associated with financial instability being now much more complex compared to previous periods. Therefore, partly in direct response to the 2007 crisis in developed countries, debates have been launched in a number of advanced economies and regions on how the existing framework for financial stability can be improved, including the appropriate role of central banks.

Thus, in March 2008, the US Treasury issued a plan for a modernized financial regulation structure. Motivating this reform, the plan argues that the existing regulatory structure was created predominantly more than 70 years ago and that this structure now "struggles to keep up with market developments" and "faces increasing difficulties in prevention, and anticipation of financial crises.

In the UK, in response to the experience gained in relations with "Northern Rock", the authorities issued a consultative document (in July 2008) to strengthen the UK's financial stability framework. The document intends to strengthen the role of the Bank of England in financial stability,

giving it formal statutory responsibility for financial stability and the main role in implementing a special regime for banks.

Finally, there is an international debate on the financial stability framework and the role of central banks. A recent report was prepared by the G30 (in 2009) - "Financial reform: a framework for financial stability" which, among other things, provides a set of long-term recommendations in response to the ongoing crisis.

The financial system is usually found within a stability corridor from which it can move into an area of instability following a severely destabilizing shock when the usual remedial measures have not proven effective. If, in the period of instability, imbalances are exacerbated, the system risks going into crisis. Exiting the crisis requires drastic measures to reform or re-regulate the financial system.

Thus, financial stability is a feature of the financial system, the goal of maintaining financial stability is to avoid important disruptions in the vital functions of the financial system (payment system, financial intermediation, risk insurance). Financial stability is a key condition for the functioning of the national economy and represents the situation in the economy, characterized by the lack of imbalances that could lead to a negative correction of the financial markets, the emergence of a systemic financial crisis or the inability of financial institutions to maintain the smooth execution of financial operations.

International financial institutions consider that the importance of regulatory and supervisory activity for the stability of the financial sector is indisputable. Ensuring financial stability must become a permanent concern of responsible national and international financial institutions. Financial stability is maintained through appropriate regulation of current and potential risks, effective management of risk management and redistribution mechanisms, and confidence in the financial system.

Recent international experience shows that a key element of maintaining financial stability is the close communication and coordination between the relevant agencies. Considering this, countries have resorted to setting up financial stability committees. Considering this, countries have resorted to setting up financial stability committees. Financial Stability Committees (CSFs) are currently important tools for ensuring financial stability in many countries. These are in most cases created for the purpose of promotion communication and cooperation between the institutions responsible for prudential regulation of different spheres of the financial sector at the micro and macro level. In most cases they are created on the basis of a memorandum of understanding signed by the relevant institutions. In the case of EU member countries, such forms of cooperation have been requested by the ECOFIN Council since 2006 with the aim of ensuring the exchange of information between authorities, as well as with the purpose of preventing, evaluating and managing possible difficulties that have a systemic impact. The creation of the CSF differs from country to country and there are various debates about their organization. Among the main institutional aspects of the CSFs are the mandate and their composition.

In most countries, CSFs are mainly focused on communicating between member agencies in order to identify potential systemic risks and prevent financial crises. In the event of risks materializing, the committees require the coordination of the actions between the members to allow a timely and effective policy response. Such institutional arrangements are also found in the euro area countries, where there are supranational institutions responsible for managing risks and crises: The European Systemic Risk Committee coordinates the activities related to risk analysis and prevention, while the European Central Bank, through the Single Supervisory Mechanism, is responsible for overseeing large banks.

At the same time, in some countries, these discussion platforms have evolved into institutions that make decisions of systemic importance, becoming macro-prudential regulators. A relevant example is The Financial Policy Committee was created in addition to the Bank of England, responsible for setting countercyclical capital buffers, establishing sectoral capital requirements, and prescribing macro-prudential recommendations.

The issue associated with maintaining financial stability is becoming a very important issue throughout the world and is currently receiving special attention in industrialized countries. This is extremely important and current also for the Republic of Moldova, which is in the process of developing financially faster and inserting itself into the international financial structure and international financial markets. Therefore, in order to succeed in promoting sustainable economic growth in the Republic of Moldova, it is necessary to take into account the relationship and the factors that may affect the financial stability and, respectively, generate financial instability and, in particular, the way in which these factors interact.

Although the positive relationship between financial stability and economic growth is not yet well identified, it is still demonstrated that the development of the financial system is associated with economic growth. The level of financial development is indeed associated with economic growth, but it is not known whether the same positive relationship exists between financial stability and economic growth.

In contrast, financial instability, according to many researchers, usually slows down economic growth or blocks it altogether. And in this regard, there is some evidence to support this view. Instability could indirectly affect growth, because an unstable financial system, one that is highly prone to bankruptcy, or which does not work efficiently in the intermediation of funds, will develop slowly and thus its growth will delay economic growth.

Financial stability is the condition of the economy characterized by the lack of major imbalances, which could lead to systemic financial crises, the inability of financial institutions to carry out financial transactions uniformly or financial markets to fall. This condition is essential for the functioning of the national economy.

The monitoring of financial stability is based on the identification of risks and vulnerabilities at both the individual and system level, in order to determine the systemic impact of the institutions under the supervision of the NBM.

In 2018, the Law no. 209 of October 12, 2018 regarding the National Financial Stability Committee (CNSF), which establishes the attributions of the CNSF in the implementation of the macro-prudential policy, as well as in the prevention, reduction or elimination of the risks that threaten the financial stability and the management of the systemic financial crisis situations. The National Bank of Moldova (NBM) is part of the nominal composition of the CNSF, and the NBM governor is the chairman of the committee. At the same time, the NBM provides the logistics and secretariat work within the CNSF, as well as supporting materials needed to make decisions within the Committee.

The role of the NBM in maintaining financial stability is one of major importance, due to the significant share held by the banking sector in the financial system.

Within the NBM, the tasks related to financial stability are exercised through prudential regulations and supervision, the supervision of the functioning of payment systems, as well as by establishing the tools of macro-prudential policy and the identification of companies of systemic importance (O-SII). In the current situation, the macro-prudential policy instrument implemented by the NBM is constituted by the capital cushions, established based on the Regulation on the capital cushions adopted by the decision of the NBM Executive Committee no. 110 of May 24, 2018. These

are intended to prevent the excessive accumulation of systemic risks of a cyclical or structural nature that can lead to significant distortions in the functioning of the financial system.

## **CONCLUSIONS**

Macro-prudential policies must achieve two main goals: stability and sustainability of the financial system; as well as the close monitoring of the financial cycle for the early prevention of the emergence and development of vulnerabilities in the financial system. It is necessary to work together and to apply adequate governance at the macro-prudential level, covering the three areas of financial authorities, namely, the central bank, regulators and supervisors.

The outcome of the research on the concept of financial stability allows us to define that a stable financial system is a system that always goes to a state of equilibrium after it has been affected by internal and external shocks, being able to carry out its usual functions of efficiently allocating savings to investment, correct pricing and an efficient payment system, functions that contribute to economic growth and welfare. The term of financial stability is distinguished from the absence of systemic risk, vulnerability or fragility.

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