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- Peer Review -

The peer review process has a vital role in achieving both the goal and the objectives of the journal, evaluating originality and quality of articles submitted for publication. Within this process, reviewers may suggest improvements of form and content of the articles reviewed.

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DIGITALIZATION PERSPECTIVES ON FINANCIAL AUDIT

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Abstract: *Currently, the financial audit process is carried out in an anachronistic manner by professionals in the field. Digitization is, in itself, a way to start dealing with the problems we have created in the past. The aim of the article is to try and highlight the benefits of a digitized process of automatic data processing in a financial audit. Digitization uses a number of integrated and complementary tools. This will help us address the future needs of financial auditors in fundamental ways, using "external" thinking to digitize end-to-end processes so that they truly meet the needs of customers and the market. The need to adopt integrative applications that have a good functioning and flexibility of the processes appears in a globalized environment with more and more varied accounting programs. For this, the easy, simple, accessibility of those interested, able to adapt to legislative changes and new technologies quickly must be taken into account, while also displaying transparent information, low implementation costs, protection from cyber attacks and last but not least to contribute to the elimination of tax evasion and a better management.*

Keywords: *robotization, digitization, financial audit, automation.*
JEL classification: *M40, M41, M42.*

1. Introduction

This paper considers the applicability of digitalization in a financial audit process and the effects it has on companies and auditors.

The amount of work done in an audit process increases from year to year and productivity needs to be improved. There is also a problem in improving quality to meet the expectations of audit stakeholders. Moreover, due to the impact of the new coronavirus infection spread (COVID-19) in 2020, it is estimated that each company will promote the introduction of remote works, automate operations and digitize the system by removing paper documents.

As the digitization of audit processes can be an effective means for these issues, audit firms together with IT specialists conduct daily research and development in this area.

As we develop and exploit the processes that underlie any digitization, we will also encounter challenges related to various aspects of operations employed in the financial audit.

Time and energy wasted in systems with outdated operating procedures should be limited and eliminated as much as possible in order to improve customer relations.

Transformation initiatives naturally create premises for digitization, especially where there are significant gaps between the operational needs of the audit process and the capabilities of existing IT systems. This need is what attracts interest for RPA (Robotic Process Automation).

As part of an RPA initiative, software "robots" that act as users of IT applications are configured and managed.

Robotization technology offers a non-invasive alternative to coding automatic task logic for simplicity processed in a new application or service, then creates and uses specialized integration APIs or integrates the new code with existing systems by other means.

2. Review of scientific literature

To solve the problems in the audit, it is necessary to prepare a large amount of standardized data to teach artificial intelligence to use the information in audit procedures.

In the past, the audit activity did not standardize in a digital environment the data it analyzed, for the simple reason that the accounting system is different from one company to another and the activity of the audited companies differs, from one case to another, and currently, the implementation of the digitization process is significant.

Due to these differences, it often takes time to process and enter financial data into the analysis tools for the audit process.

Recently, an increasing number of companies are changing their reporting processes according to the standard system.

Standardizing the audit report is of real benefit to the auditor. This will facilitate communication with the beneficiaries, providing a binding common language for both parties. The terms used in the report have the same meaning, namely the one defined by the specific audit standard, both for the auditor, aas well as for the beneficiaries. This requires the auditor to prepare the report in a certain form, to use certain terms and expressions, and the beneficiary to study the standard to understand the auditor's conclusions.

The effort on the part of the beneficiary is minimal, because during the audit there is a continuous communication between the two parties, the conclusions already being known to them prior to the drafting of the report.

Financial data is beginning to be standardized at the European level, managed centrally on different platforms, and it is expected that not only the real-time use of financial information that contributes to management decisions, but also how financial audit processes will be conducted change significantly.

The emphasis is on using the results of the financial audit in the databases and the financial analysis of the consolidated packages at the level of the financial statements. All accounts that make up the consolidated financial statements, after detecting anomalies in advance, may focus on verifying the transactions for which anomalies were detected in the financial audit.

To perform a financial audit report using digitization, three steps are to be performed:

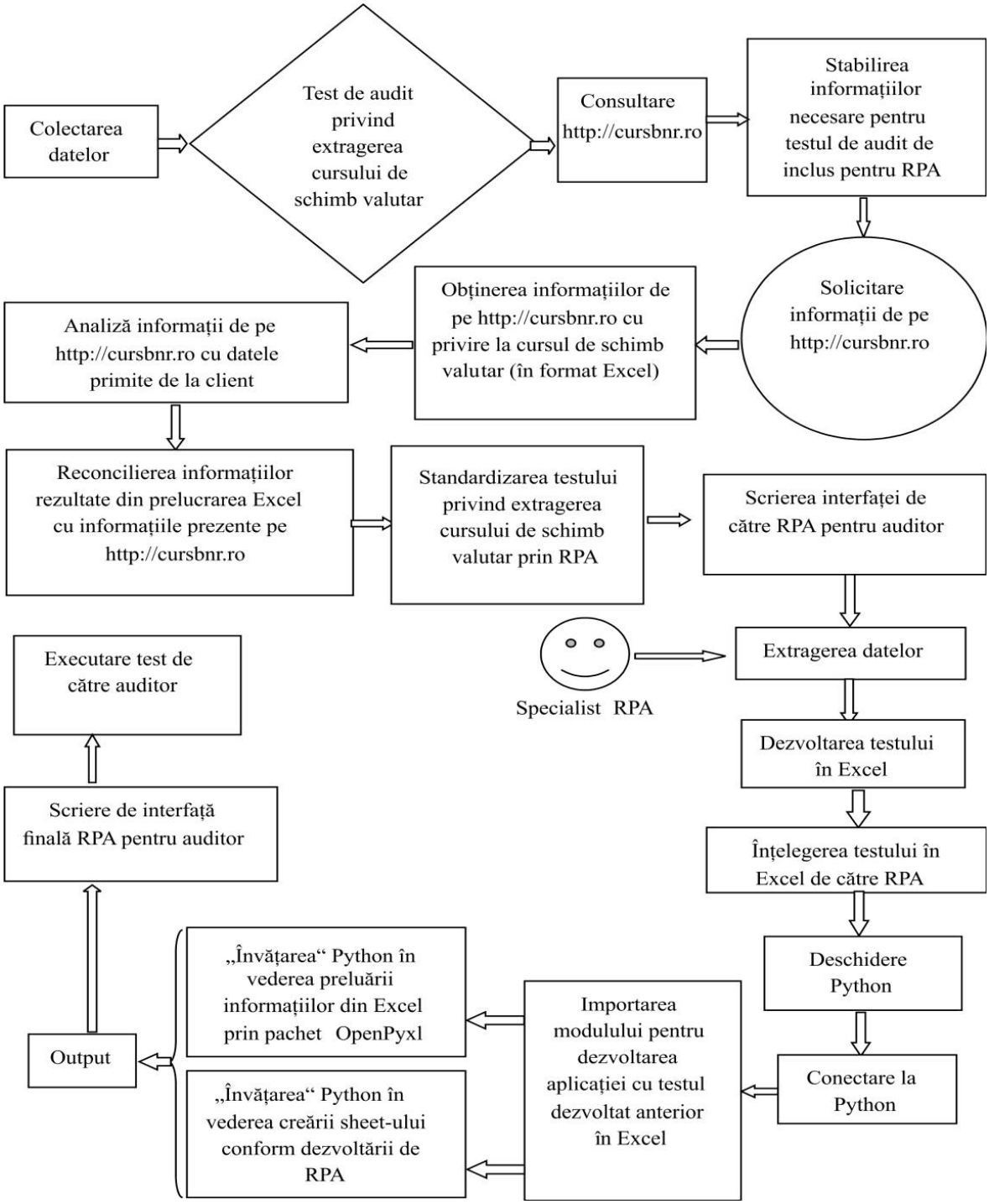
- The standardization of procedures and databases
- The introduction of artificial intelligence
- The digitization of audit procedures

In addition to creating an environment in which data containing financial information and advanced data analysis technology can be fully utilized, it is essential to improve the digital literacy of the human resources responsible with the financial audit.

In order to implement digitization in the audit processes, it will be necessary to involve experts, specialists and scientists who analyze the obtained data and build algorithmic models.

IT specialists have created a logical map of the automation process as follows:

Figure no. 1. Automation process logical map



Source: Cristea, L.M., (2020), Emerging IT Technologies for Accounting and Auditing Practice, *Audit Financiar*, vol. XVIII, no. 4(160)/2020, pp. 731-751, DOI: 10.20869/AUDITF/2020/160/023

When defining the aspects of a financial audit report, more effective due to artificial intelligence, several questions need to be asked: What is a good decision? What is the acceptable quality of such a decision and how should it be assessed? What is a reasonable time to prepare an opinion issued by financial auditors and how can it be quantified? What are the reasonable costs? Such questions can only be answered by applying a legal rule and resolving a value conflict.

The auditors will have a deep understanding of the activity of the audited company based on their specialized knowledge in the field of accounting and will consult with the audited company making the best use of their skills while collaborating with various specialists.

By introducing the coexistence of artificial intelligence and accountants in the audit activity, we are trying to remove the false idea that AI robs accountants of their jobs.

The value of future audits beyond these challenges is digital technology, through continuous audits that detect anomalies in real-time financial information.

The continuous collaboration with professionals to discover the risks, alongside the communication with the audited companies has as final goal the construction of a financial audit ecosystem that eliminates the accounting fraud.

Although special attention is paid to the development of digital technologies that can be used to stabilize the financial audit ecosystem at company level, research and development is being conducted regarding the possibility of using it in global audit practice.

By implementing the financial audit system, financial information will be monitored in real time, and financial transactions will need to be verified quarterly before settlement. Because the audit method focuses on data analysis, audits are usually performed from home in a robust security environment and the audited companies are visited to be provided with the results and verify the actual products.

As a result, it is expected that not only auditors but also audited companies would be less burdened by the audit process, which would then contribute to the reform of the working style of both parties.

It will be necessary to move to an audit compensation model that takes into account low technological costs. It is also essential to provide a detailed explanation to the audited company regarding the change in the audit compensation model.

For implementation, some of the commitments may be: efforts to improve the reliability of financial reporting and auditing, active investments in information technology, investments in human resources, accounting and financial auditing in the new digital system.

The possibilities of new employees, including from among predecessors, will also be explored, and efforts will be made to improve the efficiency and effectiveness of audit processes.

Auditors need to make efforts to help reduce the administrative burden on audited companies, and we anticipate that not only corporations but other entities will use the common platform in the future.

In order to carry out the audit activity, there are some challenges that need to be addressed by the whole ecosystem. Western companies often unify management information by first introducing their own system, then rearrange it at the time of reporting in accordance with current regulations and financial reporting systems, as needed.

Traditional IT-based integration projects involving older systems can be difficult to justify, for several reasons, including software and labor costs, skill availability, security, and operational risks.

Because the technology is not invasive to existing systems, stand-alone RPA projects can be delivered much faster and at a much lower cost than traditional IT-based integration projects - with less involvement from people with difficulties.

We see a significant interest in digitization for the finance-accounting and financial audit system.

These areas typically suffer from the aging of IT systems and; moreover, business processes typically contain highly structured task groups in which operators often have to:

- enter data into multiple systems
- retrieve data from one system and enter it into another
- reconcile data between two or more systems
- run system reports and act on results in a structured way

Much of the work involved in these tasks is automable in theory and can become automated in practice - especially in cases where there are large volumes of work. Compared to humans, automated software systems do not have to rest, can run for an unlimited number of hours and do not lose focus.

Of course, unexpected errors will occur when robots are used, but in well-designed RPA systems, error rates for automatic tasks can be very low.

3. Research methodology

Artificial intelligence is in a wide range of development and is the main concern of modern society, related to digital transformation. This is the result of fundamental changes in the way literal documentation processes work. Sometimes we have to move away from the long processes on which the old procedures were built in favor of relatively new practices, which are still undefined.

In order to issue an opinion, the financial auditor analyzes the documentary materials and carries out a laborious activity which he completes by concluding a financial audit report.

For the elaboration of the paper, the most important stage is the gathering of evidence, on which the opinions are based. The auditor's effort to gather evidence to characterize the financial statements is noted in the audit file. The study of documents is the premise and the necessary and mandatory condition for the preparation of the report, well-founded, based on supporting documents and accounting records, and not on presumptions, statements of the parties or witnesses. The working documents are the property of the auditor and the information contained in the file is confidential.

Practice has shown that these conclusions must be presented in a standardized form, in order to be intelligible, clear, avoiding equivocal language and any misunderstandings arising from the different formulations of the same ideas.

A distinctive feature of the financial auditor profession is the assumption of responsibility to act in the public interest. The appreciation of responsibility, as in any other field of human activity, is relative.

The audit report embodies the specific form of presentation of the conclusions, finally materialized in the auditor's opinion, and represents a synthesis of the results obtained, of the works executed, of the procedures used and of the conditions in which this service was provided.

The trust in the opinion expressed in the report is based on the ethical and professional conduct of the auditor, on the research methods used and his experience. The history of financial auditing shows that the trust of auditors increases with the standardization and increase of the company's control over the audit activity.

The formation of the auditor's opinion represents the final result of the analysis and evaluation of the accumulated evidence, provided that sufficient and adequate evidence has

been collected to reduce the audit risk, below the level established when accepting the commitment.

4. Results and discussions

We need a regulatory framework to implement and implement public strategies and policies in the field of digital transformation and the information society. In this sense, a new structure has been organized and operates, the Authority for the Digitization of Romania (ADR), with legal personality within the working apparatus of the Government and under the coordination of the Prime Minister, which includes all departments or services of strategy, coordination, supervision. and implementation in the field of e-government (coming from 4 institutions).

The financial audit activity is carried out by examining documents, records and financial statements, including inspections, and obtaining information from internal and external sources, all usually by sampling and focusing on events that have changed the representation of the organizations' assets over a given period of time, usually annually.

In the fiscal sphere, this approach has undergone important changes, in particular regarding the periodicity and scope of the data analyzed. This new reality has emerged and been intensified since the implementation of the digitalized accounting system, at highly different levels and segments of companies, involving their departments.

The financial audit aims to identify any errors or defects in the company's controls, so that the taxpayer can make the appropriate adjustments and corrections. We know that compliance with tax obligations is a major challenge for companies in general.

To avoid problems, it is ideal to carry out a prior financial audit through a technological resource that facilitates "private inspection" through the use of digital files.

One of the hallmarks of digital auditing is that it can be done remotely. Imagine that a company hires a consultant to verify compliance with tax obligations. In this case, the service can be performed only in a virtual environment, eliminating the presence of auditors in the organization.

Agility and low cost are also issues to consider. Because it is an action taken in the virtual sphere, the audit has a shorter duration than in the conventional way, influencing the amount charged for the service. Thus, the technological process through which the financial audit can be carried out will have excellent results, especially from a fiscal point of view.

The advantages of using the digital system are:

- The ease of correcting irregularities

Because we are talking about a digital system, this type of audit performs several complex analyses over a short time span. Thus, it reduces the wait between document submission and data analysis and the company is able to better correct any errors, considerably reducing the chances of being penalized by the tax authorities.

- Reliability of information

This type of audit generally allows the data to be more reliable because it is not exposed to human error. In other words, the chances of a tax file being opened or having problems with the inspection are virtually nil. This certainly increases the credibility of the organization - which is very important in the current scenario.

- Law enforcement warranty

The legislation in place imposes a number of tax obligations on the part of taxpayers. Undoubtedly, it is necessary to use tools that provide the company with operating conditions in accordance with the law. Transparency, quality of management and respect for consumers and laws are factors that are increasingly appreciated in the market and which strengthen sustainable economic growth.

- Application domain

Thus, given the circumstances and facilities of technology, both for tax authorities and companies, it is always prudent for the taxpayer to take a more careful position, previously auditing the data and information that is sent to the tax authorities.

5. Conclusions

In recent decades, AI has been a topic of debate and growing developments. We live in an age where technology is developing rapidly and can be universally applied to different business environments. In the audit, this is still a difficult topic addressed by the scientific community, which justifies the relevance of this study.

In this context, the main objective of the article was to understand the impact on the possible applications of AI, as well as the prospects for implementing digitalization in the financial audit.

Although the impact of AI is still low today, there is the perception that implementation is inevitable. In fact, auditing involves routine tasks that can be simplified and automated using these techniques, increasing work efficiency and effectiveness. Today, AI is already used, for example, in automating the production of standard reports.

Despite the fears highlighted by the rumors about the disappearance of the professions of accountant and auditor, they will not be replaced, but will have to develop new skills to adapt to technological developments and the emergence of new functions.

The change of the new generation, the necessary investment, the size of audit companies, the information systems used by auditors, the possibility to include new tests and methodologies in audit standards, are some of the factors thatfacilitate or condition, for respondents, the implementation of AI for audit.

In short, the evolutionary trend of the profession is obvious. Those procedures that have been used for many years are now obsolete, and the audit needs to move towards new technologies to keep up with its customers' developments and even go beyond that. It remains for auditors to broaden their horizons, acquire new skills and contribute to the critical sense and judgment that is so typical of them.

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OPTIMIZING THE IMPACT OF THE ECONOMIC-FINANCIAL ANALYSIS OF ECONOMIC ENTITIES IN THE FIELD OF CONSTRUCTION BY MODERN INSTRUMENTS

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Abstract: *The economic-financial analysis is seen as a set of concepts, tools, methods, which facilitate the treatment of accounting information to assess the economic and financial situation of an entity and the level and quality of economic performance. The role of the economic analyst is to make some simple figures to "communicate" optimally to all categories interested in economic and financial information. The activity of any entity takes place in a dynamic and aggressive environment which emphasizes the need for the impact of economic and financial analysis on decisions, to be appropriate and balanced. Modern tools for reflecting information, including those of an economic nature, use computer systems to identify, extract and analyze available data to provide real support for business decisions. The information provided by these tools allows the observation of trends, difficulties, and business areas where there is a need to optimize the business. All these elements lead to a decentralization of decisions allowing employees to move from simple executors to decision makers. The main objective of the research of the economic-financial indicators in the construction field concerns the determination of the value of the construction works, as well as of the evolution tendencies, for the subsequent provision of the essential data about the activity of this field at the level of South Muntenia region.*

Keywords: *economic-financial analysis, accounting information, reporting tools, performance.*
JEL classification*: D81, M41.*

1. Introduction

The current issue being debated internationally is related to measuring the added value for homeowners, which is becoming a key issue, especially as more and more entities have begun to aim to achieve this. The accounting model that supports modern methods of economic and financial analysis must highlight the achievement of value additions compared to traditional measurements. Accounting information circulates in the form of specific data at the level of economic entities for communication within the economic entity or communication to third parties.

The study on the economic-financial analysis is represented in the literature from the perspective of various sides. The economic-financial analysis investigates the activities or phenomena from the economic point of view, respectively of the consumption of resources and of the obtained results. The essential thing in the economic analysis is the consideration of the structural-functional relations and of the cause-effect ones. (Işfănescu, Stănescu, Băicuşi, 1999).

2. The field of constructions in Romania - economic-financial radiography

According to statistical data, the activity of the construction sector in Călărași, Argeş, Dâmbovița, Giurgiu, Ialomița, Teleorman and Prahova counties demonstrates a significant potential, accentuated by the increase of the entities' confidence in developing medium and long term investments. The economic information reflects the fact that the economy in the South Muntenia region works with "engines running", investments in this field having the capacity to generate horizontal development, by attracting collateral business in all fields, from real estate and industry, services and tourism to to trade. The South Muntenia region is a good example that the economy tends towards constantly growing values by increasing the confidence of the categories interested in the economic-financial activity, thus creating more and more solid economic chains. An economic radiograph of the South-Muntenia Region reflects a significant increase in the appetite of

private individuals for real estate investments, renovations and landscaping. The positive trend of activity from an economic perspective needs a stable exchange rate and support from the banking environment.

The main objective of the research of short-term indicators in constructions is to determine the evolution trends, in order to provide further information on the activity of the construction field at the regional level. The demand coming from the users determines the maximization of the role of the information provided by the economic-financial analysis of the entity through their request.

The objective of the analysis of the economic-financial indicators is the provision of information about the financial position, elements that are useful to a wide range of users. The entities that are part of this study are in the field of construction (CAEN code 41- Construction of buildings), are located in the territorial area of the South Muntenia Region and are placed in the top 21 within the region.

As anticipated, in order to be credible information, it must accurately represent the company's results and financial position, reflect the economic substance of events and transactions and not just their legal form, be neutral, ie uninfluenced, be prudent and complete in all relevant aspects (Ristea, Dumitru, 2005).

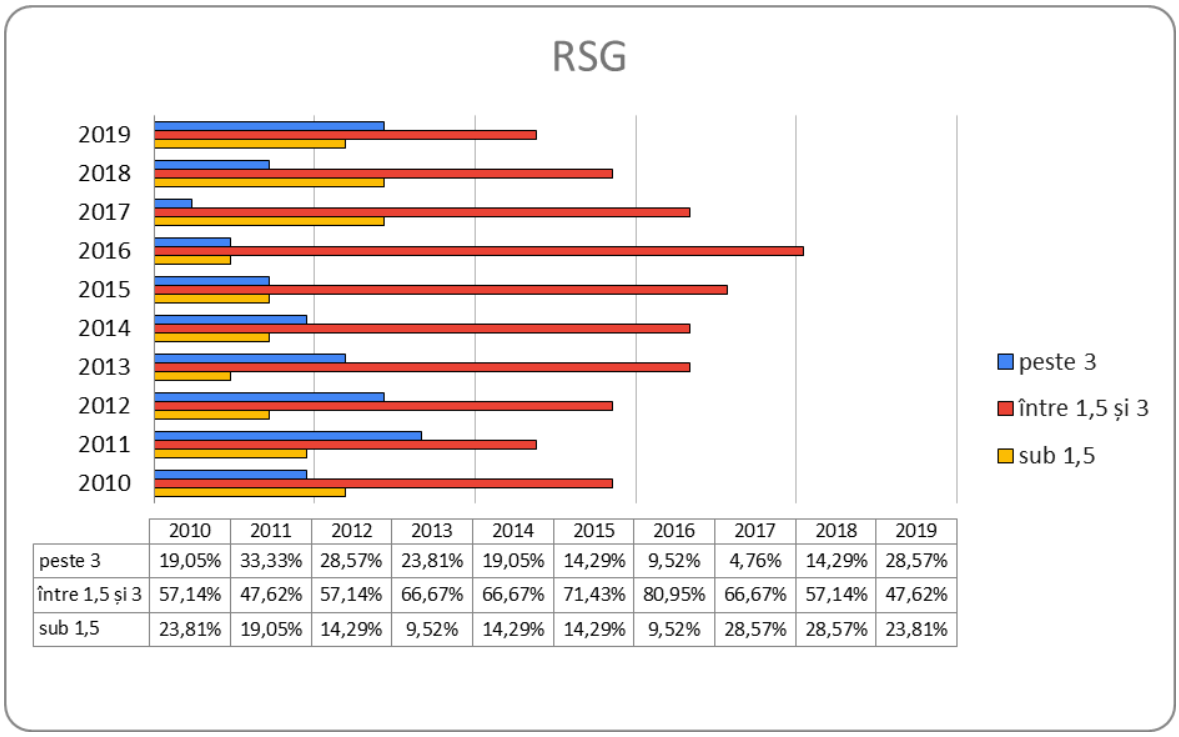
The answers to business problems can be found in the volume of data generated by day-to-day operations, which is an unimaginable increase in construction, which is why entities can analyze, manipulate and provide meaning more effectively to this huge volume of data. data, determining a real competitive advantage in the field (Iosif, 2019).

Evolutions regarding the general solvency rate for the entities in the construction field from the S-M Region in Romania

Solvency is the financial balance of entities and their ability to hedge money obligations to third parties regardless of the maturity. An entity is solvent when the sum of fixed, financial and current assets is at least equal to the total of debts or liabilities. It can be solvable, even if at some point, the lack of liquidity proves the inability to pay. The level of the coefficient must be higher than 1.5 (150%), and the increase in its value indicates a high financial independence of the entity. In situations where the entity approaches these limits, it can no longer resort to new medium and long-term loans, otherwise creditors would be unnecessarily exposed to additional risk. Solvency is considered the expression of the quality of the economic activity carried out, in connection with the use and assurance of cash. Long-term losses lead in practice to insolvency.
This indicator is calculated based on the relationship:

$$Gsr = \frac{\text{Total assets}}{Liability}\ x\ 100$$

Following the research on the 21 entities in the construction field in the S-M region of Romania, the situation of the General Solvency Rate in the period 2010-2019 is presented below.



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
peste 3	19,05%	33,33%	28,57%	23,81%	19,05%	14,29%	9,52%	4,76%	14,29%	28,57%
între 1,5 și 3	57,14%	47,62%	57,14%	66,67%	66,67%	71,43%	80,95%	66,67%	57,14%	47,62%
sub 1,5	23,81%	19,05%	14,29%	9,52%	14,29%	14,29%	9,52%	28,57%	28,57%	23,81%

Figure no. 1 Grouping of entities by average annual GSR level

Source: Author processing based on data provided by the companies' annual financial statements, published on the websites https://www.mfinante.gov.ro, www. listafirme.ro și pe site-urile societăților respective

The percentage of entities with an average annual general solvency ratio below 1.5 varies between 9.52% and 28.57%, which means that over 70% of the studied entities do not have difficulties in covering their debts on their assets. .

Following the research, it is confirmed that the entities belonging to the construction field in the South Muntenia-Romania region, registered in the period 2010-2019 an appropriate level of the General Solvency Rate (Rsg), having no difficulties in paying debts.

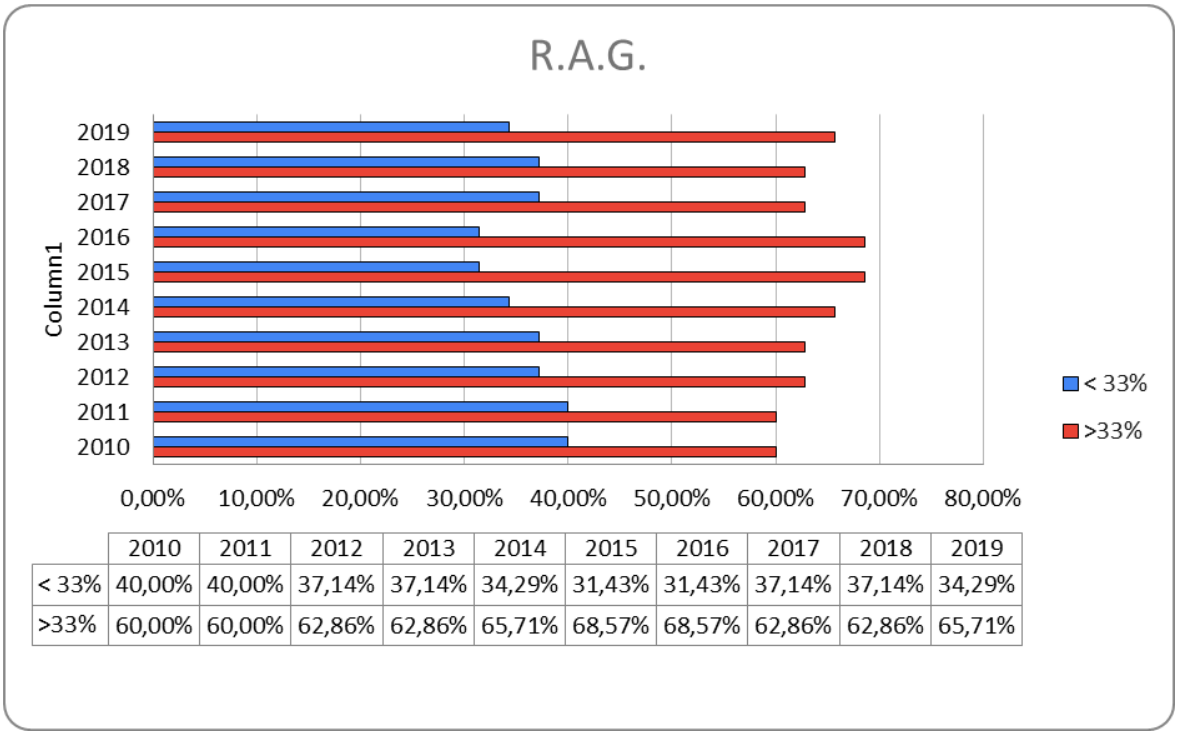
Developments in the Global Autonomy Rate

The global autonomy rate indicates the share of own resources in the total means used to finance the activity of an entity. In practice, it is recommended that the share of own financing sources be at least 33% of the total financing sources used by each entity. This indicator is calculated based on the relationship:

$$Gar = \frac{\text{Equity capital}}{Liability}\ x\ 100$$

It indicates the level of the entity's financial independence, with the increase in equity in the balance sheet liability having beneficial effects on total financial autonomy. The high value of equity leads to a reduction in lending to finance investments. Uncontrolled indebtedness causes situations that expose the entire activity of the entity to risks. A level of this rate higher than 30-40% is considered satisfactory for reaching the financial balance, while the normal level is around the level of 45%. The low level of this rate reflects a threat to the financial stability of the entities that would thus rely too heavily on debt.

Following the study on the evolutions of the dynamics of the Global Autonomy Rate carried out on the 21 entities belonging to the construction field in the S-M region of Romania, the situation of the General Autonomy Rate in the period 2010-2019 is presented below.



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
< 33%	40,00%	40,00%	37,14%	37,14%	34,29%	31,43%	31,43%	37,14%	37,14%	34,29%
>33%	60,00%	60,00%	62,86%	62,86%	65,71%	68,57%	68,57%	62,86%	62,86%	65,71%

Figure no. 2 Grouping of entities according to the level of R.A.G. annual averages

Source: Author processing based on data provided by the companies' annual financial statements, published on the websites https://www.mfinante.gov.ro, www. listafirme.ro și pe site-urile societăților respective

Analyzing figure no. 2 above, it is observed that the share of entities that register an optimal global autonomy is located on average in a proportion approaching 65%. This proves that the entities in the field of constructions in the South Muntenia-Romania region registered in the period 2010-2019, corresponding levels of the Global Autonomy Rate.

3. Balanced Scorecard

The Balanced Scorecard is an instrument introduced in the early 1990s by Robert S. Kaplan and David P. Norton in the Harvard Business Review, in the famous article "The Balanced Scorecard: measures that drive performance." Performance measurement through traditional financial methods can no longer cover the full range of competencies and skills that entities are currently trying to manage.

The Balanced Scorecard model developed by Norton and Kaplan is in fact a suitable tool for concretizing, implementing and controlling the entity's strategies. The model implies a strong preventive character, the central element being a system of indicators to substantiate the decision-making process. In the original version, the Balanced Scorecard involves the following sectors: financial, market / customers, internal processes and development / improvement. Indicators are assigned to each domain. The correlations established between the indicators are also very important to analyze. Balanced Scorecard is a concept that facilitates the monitoring of results from the perspective of economic and financial analysis. In this way Balanced Scorecard can be a

system for optimizing the economic and financial analysis to allow the entity to achieve an accelerated increase in performance. In practice, this instrument requires that indicators be set in the financial perspective that reflect the proposed objectives, setting high levels for those indicators. They form the entity's balanced scorecard from a financial perspective. In the past, the Balanced Scorecard had exclusively the function of a framework for measuring performance, evolving into a tool for strategic planning.

4. Reporting

In the specialized literature is encountered the tool called Reporting as the one that designates the information related to the achievements of a period. Reporting also appears as a set of documents that reflect a situation on the results. Reporting is used to evaluate and track the performance of the entity and can be considered to be derived from accountability accounting. From an accounting perspective, Reporting compares achievements with forecasts, identifies and investigates deviations. Reporting becomes an information system necessary for monitoring and measuring performance. The difference from the scoreboard is that the indicators are only of a financial-accounting nature, not of a financial and non-financial nature.

Reporting must reach a sufficiently detailed level of information to understand developments in each area of the business and make useful decisions. Reporting and interpreting financial results is one of the most important activities carried out at entity level. Classic accounting is burdened by tax reporting, while the level of financial reporting is low. A financial performance reporting system should be created by creating the format that best meets its own information needs without stifling the entity.

Monitoring and evaluation activities differ from traditional control by establishing the transition from exclusive control of allocated resources (mostly numerical) to reporting and review based on the interpretation of results and increasing managerial responsibility (Tabară, Briciu, (2012).

5. Conclusions

The analyzed indicators show similar evolutions in the analyzed period, reflecting the capacity to respect the commitments through all the resources. The economic-financial analysis plays an important role in measuring the influence of various factors that contribute to the efficiency of the entire activity of the economic entity. The economic-financial analysis is subject to improvement in the procedure to increase the efficiency of the activity, being able to provide key information for achieving economic and financial performance using data provided by the accounting model.

The importance of the economic-financial analysis is also increased by the fact that it must express the economic activity in a faithful way through the information it provides. The complexity and diversity of information allow a detailed knowledge of economic phenomena and the possibility of making the necessary decisions. The role of the economic-financial analysis is emphasized especially in the context of the competitive economy which requires the achievement of superior economic-financial results compared to the established objectives and compared to the previous period. It is absolutely necessary to group the information in order to facilitate their collection, processing and selection, giving the categories of users the possibility to choose the ones they need.

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MANAGEMENT OF ACTIVITIES TO COMBAT THE PHENOMENON OF TAX EVASION AND THE PREVENTION OF INTRA-COMMUNITY FRAUD

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Abstract: *The rules governing the application of the VAT exemption for intra-Community supplies of goods have undergone significant changes since the beginning of 2020, in order to standardize documentation requirements at European level, but also to combat tax evasion, given that the collection deficit the tax remains high. Proof of transport between Member States is one of the substantial conditions for granting the VAT exemption, with the EU establishing a set of specific documents that can constitute proof of intra-Community transport. Tax evasion is a special component of economic and financial crime, and combating the phenomenon has become a major goal of national and international bodies. Approached from a strictly theoretical perspective, Community and / or international tax evasion has to do primarily with the expansion of production / services, respectively of some of their components, belonging to national entities in states where they benefit from tax regulations and much more favorable social.*

Keywords: *economic crime, tax evasion, VAT, tax fraud, Open Source Intelligence OSINT, information management.*

JEL Classification*: H26.*

1. Introduction

It can be said that the EU is currently facing the import and export of economic crime. The flow of such activities is very difficult to track and control, especially since criminal groups have become transnational and have the ability to adapt easily and quickly to all elements of novelty in the community. The evolution of society, both from an economic-social point of view, as well as multicultural and political, has amplified economic crimes, a context in which economic crime has experienced a spectacular dynamic.

Tax evasion is a special component of economic and financial crime, and combating the phenomenon has become a major goal of national and international bodies. Approached from a strictly theoretical perspective, Community and / or international tax evasion has to do primarily with the expansion of production / services, respectively of some of their components, belonging to national entities in states where they benefit from tax regulations and much more favorable social.

Due to the special complexity of the phenomenon that manifests itself in the increasingly fierce contemporary period, generating negative effects on all states, respectively the arguments presented above, we consider the topic very topical, its approach requiring perseverance, documentation and special practical experience.

The main ways of limiting creative accounting are represented by: International Accounting Standards and International Financial Reporting Standards, corporate governance, promotion of ethical and moral values. But the inventiveness for finding the optimal methods of committing fraud, enriching the subcomponents of the methods used with the changes in tax regulation, knows no bounds, the desire to learn being superior to the risk.

2. Theoretical basis on tax evasion and fraud

Several forms of crime can be delimited, namely the one that harms the life and / or bodily integrity of the individual, the health or virtue of the person, patrimony and / or

property, but also business, on all their components (financial - banking, computer science, etc.). In a generic sense, economic and financial crime aims to maximize profits through punishable illegal means (crimes against companies, banking, money laundering, accounting, customs, etc.). Having a transnational character, the economic-financial crime has acquired global dimensions, with negative effects on the economic security of the states. Illegal activities are somewhat similar to those carried out by economic entities from different sectors of activity, a part of the profits obtained being reinvested on the black market, increasingly diversified and constantly evolving. Then it is certain that tax evasion is a component of this phenomenon.

All definitions of tax evasion also include the element of illegality. The reduction of the taxable mass may or may not be the result of the will of the legislator. As a result, there is the problem of delimiting the forms of tax evasion on the basis of legality, because there may be other forms of non-taxation that have the effect of reducing the taxable matter, although this is not implemented by evading the payment of tax obligations, and as such, it does not represent tax evasion.

For a long time, tax evasion was considered a component of tax fraud. However, the two notions have been delimited, in the sense that it is currently considered that tax evasion includes all manifestations aimed at avoiding the payment of taxes / fees, with two main components: tax evasion (legal) and tax fraud (illegal tax evasion) . In terms of economic theory, the legal distinction is inconsistent as long as both forms are elusive and generate a decrease in state budget fiscal revenues.

Referring strictly to tax fraud, this involves an abuse of tax laws, a crime committed knowingly and deliberately on the regulations regarding the payment of tax obligations.

Regardless of the definition of tax evasion, this phenomenon is condemned all over the world and persists despite the anti-evasion measures adopted at national, community, regional, etc. level.

Legitimate tax evasion involves the theft / concealment of a certain part of what is a taxable matter, but without this approach being a contravention or crime. In essence, any study addressing lawful tax evasion has an obligation to emphasize from the outset that the activities that led to its materialization are legal, despite the fact that it harms the quantitative dimension of budgetary payment obligations.

Lawful tax evasion has to do with the process of reducing the value of taxes / fees through eminently legal tax mechanisms. It materializes in the context in which specialists manipulate the vulnerabilities or ambiguities of the legislation in the fiscal field. Although the methods used are legal, their consequences are labeled as defective or abusive. Due to the subjectivism of those who interpret and subsequently apply tax regulations, in certain contexts establishing a clear line between lawful tax evasion and tax fraud is difficult and sometimes even impossible.

Appreciation:

The European Union defines tax evasion models that have an effect on its own revenue through the acquis communautaire in the field of tax evasion and deals separately with the issue of preventing tax evasion, which is one of the main objectives of its tax policy. The acquis communautaire in the field of tax evasion primarily concerns schemes to evade VAT, production-related taxes and imports.

→ The information that accounting provides is the main source of clues about a possible evasion mechanism or scheme. However, the accounting information is not in itself a sign of a potential evasion because only a complete, logical and systematic documentation of the observance of the accounting legislation and policies can generate the necessary indications for the instrumentation of the evasion phenomenon.

3. Intra-community VAT fraud

The rules governing the application of the VAT exemption for intra-Community supplies of goods1 have undergone significant changes since the beginning of 2020, in order to standardize documentation requirements at European level, but also to combat tax evasion, given that the collection deficit the tax remains high.

→ Proof of transport between Member States is one of the substantial conditions for granting the VAT exemption, with the EU establishing a set of specific documents that can constitute proof of intra-Community transport.

Independent or affiliated parties for the purposes of applying the VAT exemption;

The national legislation, in this case the instructions for applying the VAT exemption implemented by Order 103/2016 and recently amended by Order 2148/2020, mentions that the notion of "independent parties", within the meaning of art. 45 a of the EU Regulation 282/2011 for the application of the VAT exemption, shall be interpreted as those parties that are not considered affiliated according to the provisions of art. 7, point 26 of the Fiscal Code.

In the case of companies, affiliation occurs where the relationship between them is characterized by at least one of two conditions: a direct or indirect holding of at least 25% of the value or number of shares or voting and / or control rights, common or exercised by one company over the other. As long as one of these conditions is met, companies are considered affiliated, while if these conditions are invalidated, the companies are independent.

Documents required to prove intra-Community transport

If the parties involved in the transaction are independent, proof of intra-Community transport must be provided on the basis of European rules by means of two non-contradictory documents from the list established at European level, as follows: two documents directly related to transport , bill of lading, air transport invoice, carrier invoice); or a document directly related to the transport and an additional document, such as insurance policy for goods during transport, bank statements proving payment of the carrier, receipt issued by a warehousekeeper, document issued by a public authority (eg notary) certifying arrival goods in the Member State of destination.

In addition, if the shipment is arranged by the buyer, a declaration on his own responsibility attesting to the arrival of the goods in the Member State of destination will be required. This declaration must be sent by the buyer by the tenth day of the month following delivery, in accordance with the EU Regulation. However, the provisions of the national legislation (Order 103/2016) support the companies, mentioning that the supplier will continue to benefit from the VAT exemption provided that the declaration is received within 150 days from the date of delivery.

If the parties involved in the transactions are affiliated, for example when the carrier of the goods is affiliated with the seller or the buyer, proof of intra-Community transport is made on the basis of national rules (excluding from this analysis the supply of excisable products and means of transport), with documents directly related to transport (signed CMR or a signed consignment note, a bill of lading, specific air freight document) and one of the following additional documents: insurance policy for goods during transport, bank statements proving payment of the carrier, receipt by a warehousekeeper, a document issued by a public authority (eg notary), a written declaration from the buyer stating that the goods have been dispatched to the Member State of destination.

4. Administrative cooperation between states in the field of VAT

Tax fraud and tax evasion that extend beyond Member States' borders lead to budget losses and breaches of the principle of fair taxation[1].

[1] They can also lead to distortions of capital movements and conditions of competition.

At the level of the European Union, it has been considered that in order to combat VAT evasion, close cooperation is needed between the competent authorities of each Member State, responsible for the application of the provisions in this field[1].

Every year, the European Union loses billions of its VAT revenues due to the activities of organized criminal groups. As exports of goods and services from one EU Member State to another EU Member State are exempt from VAT, criminals can fraudulently evade the payment of VAT in the Member State of destination. This leads to revenue losses for both the countries concerned and the EU.

5. Exchange on information in the field of VAT

Information obtained from the exchange of information between Member States may be used for the purpose of determining the tax base or for the collection or administrative control of taxes for the purpose of determining the tax base.

→ The same information may be used in connection with legal proceedings which may involve sanctions, initiated as a result of a breach of tax law, without prejudice to the general rules and legal provisions governing the rights of defendants and witnesses in such proceedings.

→ By way of derogation from the general purpose, the competent authority of the Member State providing the information may allow its use for other purposes in the Member State of the requesting authority where, under the law of the Member State of the requested authority, the information may be used for similar purposes. .

→ If the requesting authority considers that the information which it has received from the requested authority could be useful to the competent authority of a third Member State, it may forward it to the latter. It must inform the requested authority in advance. The requested authority may provide for the transmission of information to a third party to be subject to its prior agreement.

Conditions governing the exchange of information, namely:

• the communicated information is provided, as far as possible, by electronic means;

• in cases where the request has not been transmitted in full by electronic means, the requested authority must confirm receipt of the request by electronic means, without delay and in any case no later than five working days after receipt;

• in cases where the authority has received a request or information without the intended recipient, it must send a message to the sender by electronic means, without delay and in any case no later than five working days after receipt ;

• requests for assistance, including requests for notification, and attached documents may be written in any language chosen by mutual agreement between the requested authority and the requesting authority. Such requests must be accompanied by a translation into the official language or one of the official languages of the Member State in which the requested authority is situated only in special cases where the requested authority provides a reason for requesting such a translation;

• the requested authority in one Member State provides information to another requesting authority in another Member State, subject to **two conditions**:

1. the number and nature of the requests for information submitted by the requesting authority within a given period do not involve a disproportionate administrative burden on

[1] Măsurile de armonizare fiscală luate în vederea realizării pieţei interne trebuie să includă instituirea unui sistem comun de cooperare între statele membre, în special în ceea ce priveşte schimbul de informaţii, prin care autorităţile competente ale statelor membre urmează să se sprijine reciproc şi să coopereze cu Comisia Europeană pentru a asigura aplicarea corectă a TVA la livrările de bunuri şi prestările de servicii, achiziţia intracomunitară de bunuri şi importul de bunuri.

the requested authority;
2. the requesting authority has exhausted the usual sources of information which it could have used under those conditions in order to obtain the requested information, without risking jeopardizing the attainment of the objective pursued.

6. Concrete ways to remove fiscal obligations

An economic operator who carries out a commercial activity and intends to evade the payment of tax obligations has several options at his disposal to achieve his goal. If it opts for the non-registration of all or part of the revenues, there is the probability that by a simple check in the database, the tax authority will find inconsistencies between the informative declarations regarding deliveries / services and purchases made on national territory (394, 390) submitted by supplier and, respectively, by the beneficiaries, to initiate a fiscal control and, on this occasion, to discover the tax evasion practiced.

→ Similarly, the economic operator could try to reduce its taxable income by increasing expenses, achieved through the accounting of fictitious operations. Nor can this option give him a chance to evade criminal liability, as a routine tax audit could find that the invoices and other supporting documents provided are false, come from an inactive taxpayer or have another object of activity, no payments have actually been made. on behalf of these benefits, etc.

→ These are common forms of tax evasion, quite common, but which can not generate substantial damage, because they were not designed and organized in such a way as to have all the characteristics of a large-scale operation. In order to avoid tax controls for as long as possible and, implicitly, to avoid criminal liability, an economic agent will use apparent circuits of commercial transactions and financial flows in which phantom companies and commercial companies are involved. non-resident (offshore). The stakes of such fictitious circuits can be both the reduction of the profit tax paid, and especially the illegal deduction of VAT, with the creation of an appearance of creditworthiness and credibility, but also the insurance of the proceeds of crime by money laundering.

The main fraudulent financial reporting schemes relate to underestimation of income and misrepresentation of inventories, to which are added other schemes relating to the valuation of assets, liabilities and receivables or other schemes. Smoothing results, another creative practice, aims to reduce variations in accounting results, wanting to provide a relatively constant level of financial results over several financial years.

Revenue management as a method of applying creative accounting takes place when managers have a certain goal that they must achieve for objective or subjective reasons. The simplest technique for applying this method is to choose when to sell an asset based on when you want to record a profit. Another technique refers to the recording of exceptional expenses that belong to several financial years only in one, because the occurrence of that exceptional event can serve as a basis to justify the low performance of the entity in that year.

Typical Community fraud involves the use of an economic circuit consisting of VAT-paying entities with different functions. Committing this type of fraud requires the existence of a phantom entity which does not carry out economic activities but which is used only for making intra-Community acquisitions and recording deductible value added tax. Other methods of VAT fraud are fictitious intra-Community supplies and cash & carry schemes.

We consider that the identification and assessment of fraud risk components is the central pillar of control or audit actions, which cannot define their objectives in the absence of knowledge of potential risks. That is why, in the applied research, we developed a case study aimed at improving control strategies in the field of combating community fraud. It aims to

design a general audit framework focused on identifying specific methods and techniques for detecting Community fraud at the level of European funds.

Appreciation:

As a general rule, a ghost company [1] it does not actually carry out commercial activities, but generates supporting accounting documents, which are used by the other commercial companies involved in the evasionist circuit.

7. Impact of negligence in checking the risk potential of business partners on VAT

Regular verification of the risk potential of business partners is becoming increasingly stringent. The National Agency for Fiscal Administration (ANAF) has been applying, for several years now, the principle taken from the case law of the Court of Justice of the European Union which states that when VAT evasion occurs, the parties involved in the transaction "knew or should have he knows "that he is participating in tax evasion.

Starting with January 1, 2018, the Fiscal Code also specifically grants ANAF the right to refuse the VAT deduction if it proves, beyond any doubt, that a company knew or should have known that the acquisition was involved in a VAT fraud , regardless of the stage in the supply chain in which it intervened. However, the same principle applies to intra-Community deliveries, especially in the case of goods that are transported outside Romania by the customer. In this case, suspicions that could hover over a legal entity in the absence of customer verification may lead to the cancellation of the VAT exemption, insofar as customers do not transport the goods in another EU Member State.

Thus, it becomes absolutely necessary to regularly check the risk potential of business partners. Companies are required to demonstrate that they have conducted reasonable investigations of business partners, for example regarding tax status, reputation, procedural history, debts, headquarters, number of employees. All these checks should highlight whether there may be suspicions of VAT fraud at the level of business partners.

The authorities consider that those companies that have not performed due diligence in their business relations are negligent, negligence that may make them suspicious. Beyond the interpretation of the law, which is the subject of many administrative appeals and disputes with the authorities, there is the difficulty of fulfilling the requirement to be diligent in contractual relations in order to prevent potential disputes and risks.

The tools provided by ANAF allow the verification of VAT codes, information about business partners. Thus, checks can be made in the two existing registers at ANAF level (Register of inactive or reactivated taxpayers, respectively Register of taxable persons registered for VAT purposes) or with the help of other sources of information - outstanding tax obligations, lack of employees, registered office, etc.

However, even these criteria are debatable, because they do not always reveal the real situation of the verified company, in practice there are cases where the information is not updated in real time. Moreover, it involves a detective activity that involves the allocation of costs and human resources.

The technique of performing the verifications undertaken by the tax inspectors necessarily involves the application of the method appropriate to the type of activity carried out by the controlled entity, the multitude of fiscal control procedures being able to be combined depending on the proposed purpose. Common control methods can be combined with specific verification techniques and have as a preliminary procedure the general study of

[1] Phantom companies are used by the beneficiary by involving them in the evasion circuit, in order to avoid the payment of tax obligations to the state budget, but with the appearance of an appearance of legality under the justification of good faith.

the activity (which can be performed based on data held on the computer platform of the tax authority), followed by effective control of the documents underlying the to declare the activities carried out. Subsequently, inventory operations may take place when the entity declares depreciation or stock of goods, and in case of suspicion, the tax authority may also order the performance of specialized expertise (for example for the forgery of documents) or laboratory examinations, being also controlled the account statements through which the economic agent carried out collection and payment operations.

When carrying out the fiscal control, the most significant documents and accounting records must be checked, which most eloquently reflect the taxpayer's fiscal status, any reported inconsistencies leading to the need for a more thorough control to identify the sources of these inaccuracies and to notify, where appropriate, the existence of indications of the commission of illicit acts of an evasionist nature.

8. Conclusions

Creation of a definitive VAT collection system by extending the reverse charge procedure to all commercial transactions across Europe.

Being a broad-based consumption tax, value added tax (VAT) is one of the main sources of tax revenue in the European Union, with a growing share, but in recent years, the VAT system has not been able to keep up with globalization. and with the digitalization of the economy.

Modernizing the VAT system and adapting it to the challenges posed by the fight against fraud are key elements for the future of the single market. The reform of the current VAT system should contribute to the development of the digital single market and complement the agenda set by the Commission for creating a fairer and more efficient corporate tax system in the EU.

In this context, it is both necessary and urgent to move further towards an EU-wide VAT system that can stimulate job creation, growth, investment and competitiveness and is suitable for an increasingly prosperous economy. digitized.

Suppliers must obtain the supporting documents provided in art. 45 a of Regulation 282/2011 for the presumption of intra-Community transport.

Thus, in order to be able to justify the right to deduct VAT for a purchase of services, the taxpayer must be able to provide the tax authorities with supporting documents proving that:

→ the respective acquisitions were made in order to carry out operations that give the right to deduct VAT;

→ the respective services were actually provided.

If in the case of using falsified supporting documents, or issued by inactive entities, with suspended or even deregistered activity, the situation is clear, proving tax evasion is not a difficult operation, the same cannot be held when evasion accounting techniques become more sophisticated, being increased specialized knowledge of the control body is required to detect these special techniques.

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AN ASSESSMENT OF THE CHARACTERISTICS OF THE FISCAL POLICY IN RELATION TO THE FLIGHTS OF THE ECONOMIC CYCLE IN ROMANIA, IN THE PERIOD 2007 - 2020

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Abstract: *In the proposed paper we make an assessment of some features of fiscal policy in relation to the evolution of the economic cycle, which aims to capture the discretionary nature of fiscal policy and how it has contributed to stimulating or inhibiting the economy and the type of fiscal policy that has functioned during this period in the Romanian economy, from the perspective of the stabilizing function of the economic cycle. The indicators from which we start in the elaboration of the analysis are the budget deficit and the structural deficit, from which we will extract certain derived indicators. The methodology used to achieve the objective is qualitative in nature and aims to draw links between the stated aspects. The obtained results can be constituted in elements of qualitative evaluation of the fiscal policy from the perspective of its influence on the economic cycle.*

Keywords*: fiscal policy, economic cycle, characteristics.*
JEL Classification*: E6,E62, H62.*

1. Preamble

The analysis of the conduct of fiscal policy and its influence on the economic cycle, through discretionary or non-discretionary measures, is a topic of concern in the economic debate, both nationally and internationally, accentuated in the context of fiscal integration efforts in the European Union and implementation of principles tax discipline at Member State level. In this sense, the fiscal framework and the instruments for its implementation, found in the Maastricht Treaty, the Stability and Growth Pact, the European Semester or the Treaty on Stability, Coordination and Governance have as main purpose the assurance of budgetary discipline and provide the necessary premises for a functioning policy non-discretionary fiscal, with the role of automatic moderation of the fluctuations of the economic cycle.

The budget deficit indicator has a high degree of sensitivity to the fluctuation of the economic cycle, which can manifest itself in two situations. In the first situation, the one due to the fluctuations of the economic cycle, appeared without the implementation of discretionary measures, when the budget revenues and, less, the budget expenditures vary with the level of economic activity, automatically propagating on the budget deficit. The second situation, of the fluctuation of the budget deficit is represented by the effect of the discretionary measures implemented by the fiscal authorities that can induce a variation of it.

In this context, outlined here, theories have developed and interest in the efficiency of fiscal policy has grown, in the search for optimal solutions for the transmission of fiscal impulses in the real economy, especially in the context of financial, economic and social crises, more and more common.

The substratum of the debates is built on the known theories, namely the Keynesian one favorable to the application of discretionary policies that act in the sense of fluctuations of economic activity and that of neoclassical macroeconomists who support the neutrality of fiscal interventions on economic cycles. On the other hand, the current debates show that the dominant problem is the budget deficit, as the main cause of economic imbalance and instability. It consists of the sum of two components: the cyclical deficit, which represents the contribution of automatic fiscal stabilizers, and the structural deficit, which represents the component attributed to the discretionary measures

implemented. Budget revenues and expenditures contain elements that are influenced by the economic cycle, acting in the sense of moderating fluctuations. The structural balance indicates the fiscal position when the factors of production in the economy are used at their "normal" level, respectively when the economy is in equilibrium, between the state of ascent and that of recession. Given that the level of economic activity is at its potential level, ie Gross Domestic Product (GDP) is equal to potential Gross Domestic Product (GDPp) and the output gap is zero, the budget deficit is equal to the structural budget deficit, there is no external effect on the budget.

From this formula of the actual budget deficit, it is possible to determine the size of the automatic stabilizers or that of the structural balance, respectively of the discretionary measures. The more pronounced the effect of automatic stabilizers, the less discretionary action of fiscal policy is needed in response to the effects of the economic cycle. Whereas, if discretionary measures are irreversible, they tend to neutralize the effects of automatic stabilizers and to undermine the credibility of fiscal policy. On the other hand, the asymmetric operation of automatic stabilizers, both in times of recession and in times of economic growth, can lead to a propensity for structural deficit, which can lead to unsustainable increases in public debt and associated costs.

The use of the structural and cyclical deficit in economic policy is important and diverse. Thus, the structural deficit is an indicator for estimating the size of discretionary fiscal policies, which can indicate the type of fiscal policy: expansionist, neutral or restrictive. It is also a tool for monitoring the fulfillment of the Maastricht budget deficit criterion (3% of GDP), and through the Stability and Growth Pact, EU member states have an obligation to meet a medium-term budgetary objective to enable stabilizers automatic to fluctuate (practically discretionary intervention is limited).

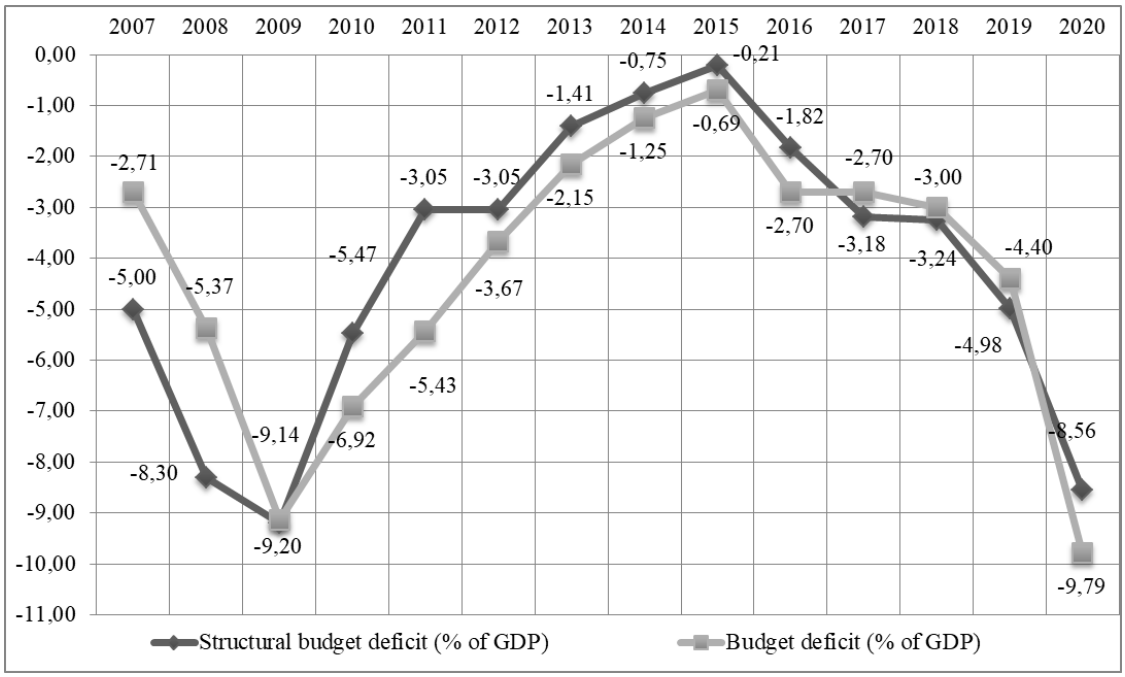
Having these theoretical and methodological landmarks, we further make an assessment of some characteristics of fiscal policy in relation to the evolution of the economic cycle, through which we aim to capture the type of fiscal policy in the Romanian economy, in the period 2007-2020.

2. Characteristics of fiscal policy

The main indicators used to analyze the characteristics of fiscal policy are the budget deficit and the structural deficit. According to the previously mentioned, based on them and some indicators derived from them, we can extract elements useful to achieve the assumed objective.

In a first stage, we present the simultaneous evolution of the budget deficit and of the structural one (fig. No. 1), with the extraction of their significance. The general evolution of the two types of deficits is very oscillating, faithfully reflecting the moments of financial, economic and social crisis, manifested at national level, in the periods 2007 - 2012 and 2018 - 2020 and the attempts to recover them, under the constraints of the European fiscal framework. manifested in the period 2013 - 2017.

The simultaneous analysis reveals that in the periods 2007 - 2009 and 2017 - 2019, the budget deficit was lower than the structural deficit, which is equivalent to the lack of manifestation of automatic stabilizers in these periods. In the period 2010 - 2016 and in 2020, the budget deficit was higher than the structural deficit, a situation that means the manifestation of automatic stabilizers.



Source: data Ministry of Public Finance, Fiscal Council Report 2018 (pp. 40 and 41) and Ameco, author processing, https://ec.europa.eu/economy_finance/ameco/user/serie/ResultSerie.cfm

Figure 1. The evolution of the budget and structural deficit in Romania, in the period 2007 - 2020

A first feature of fiscal policy in the reference period is that it was predominantly expansionist.

Romania's assumption of the Treaty on Stability, Coordination and Governance in the European Union in 2012, as well as previous commitments towards fiscal consolidation, taken over in national legislation, meant a commitment to comply with a fiscal-budgetary framework based on a series rules, with the main objective of a structural deficit of 1% of GDP. In the period 2012-2016, no ample or irreversible discretionary measures were implemented, a situation that favored the manifestation of automatic stabilizers and the maintenance of the two deficits within the committed limits.

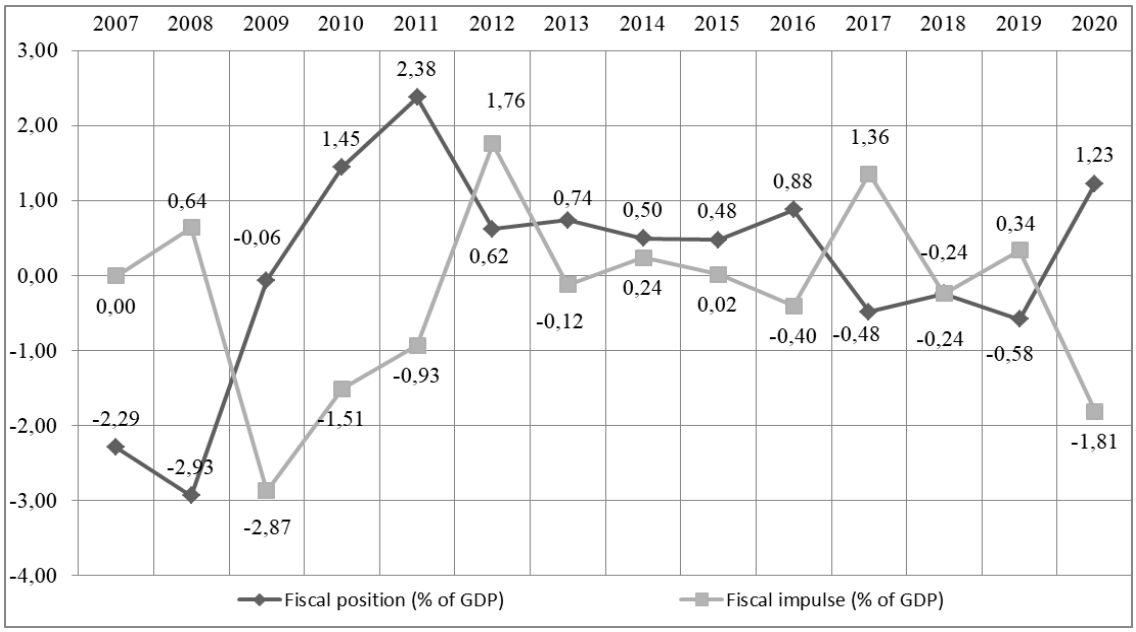
Starting with 2017, a series of discretionary fiscal-budgetary measures have been implemented, to increase budgetary expenditures (public sector salaries and the public pension system), as well as fiscal relaxation (reduction of the personal income tax rate), starting with January 1, 2018, the reduction of the VAT rate from January 1, 2017), which led to the severe deterioration of the two types of deficits, practically annihilating the action of automatic stabilizers.

In 2020, the impact of the normal flows of the economy on the outbreak and manifestation of the COVID-19 pandemic, at national, European and global level, and the implementation of discretionary measures to mitigate the economic and social effects of the pandemic, both nationally and community , have structurally unbalanced the economy and, implicitly, the nature and flows of budget revenues and expenditures.

The indicators of the fiscal position and the fiscal impulse (fig. No. 2), derived from the two types of budget deficit, complete the analysis, in order to observe other characteristics of the fiscal policy. Thus, the fiscal position shows the budget deficit gap, calculated by the difference between the structural deficit and the budget deficit, ie the current positioning of the budget deficit against potential GDP.

The fiscal position indicates the type of fiscal policy that operates in an economy, from the perspective of the stabilizing function of the economic cycle. A positive value of

the fiscal position indicator (% in GDP) indicates a pro-cyclical fiscal policy, while a negative value indicates an anti-cyclical fiscal policy.



Source: data from figure 1. processed by the author.

Figure no. 2. The evolution of the fiscal position and of the fiscal impulse in Romania, in the period 2007 - 2020

Following the evolution of the fiscal position, in the reference period, in relation to those previously mentioned, it is found that in the Romanian economy between 2010-2016 a pro-cyclical fiscal policy operated, and in the periods 2007-2009 and 2017-2019 an anti-cyclical fiscal policy was promoted and implemented. In 2020, the orientation of fiscal policy changed radically compared to the previous year, gaining a positive value of 1.23% of GDP, which means an active pro-cyclical fiscal policy, given the emergence of the COVID-19 pandemic and the need to implement measures fiscal-budgetary, especially the commitment of budgetary expenditures to support the economy.

The fiscal momentum expresses the discretionary character of the fiscal policy and the way in which it contributes to the stimulation or inhibition of the economy, being able to be measured as difference of the structural deficit for two consecutive years (the situation used in this paper) or at two different moments. A positive fiscal impulse reflects an expansionary fiscal policy, while a negative fiscal impulse suggests promoting a restrictive fiscal policy.

Following the evolution of the fiscal impulse in the reference period, in relation to the mentioned ones, it is found that the fiscal policy showed oscillating tendencies of expansion and restrictivity.

In order to highlight the characteristics of the fiscal policy promoted in 2007-2020, based on the values of the indicators fiscal position and fiscal momentum, a tabular presentation of them was made, highlighting the characteristics of fiscal policy and the state of the economic cycle (notations: A = countercyclical policy; E = expansionist policy; P = procyclical policy; R = restrictive policy).

Table no. 1. The characteristics of the fiscal policy in the period 2007 – 2020 (% GDP)

Year	Fiscal position	Fiscal impulse	The characteristics	The position of the economic cycle

			of fiscal policy	
2007	-2,29	0,00	A + E	Expansion
2008	-2,93	0,64	A + E	
2009	-0,06	-2,87	**A + R**	Recession
2010	1,45	-1,51	P + R	
2011	2,38	-0,93	P + R	
2012	0,62	1,76	**P + E**	
2013	0,74	-0,12	P + R	
2014	0,50	0,24	**P + E**	
2015	0,48	0,02	**P + E**	
2016	0,88	-0,40	P + R	
2017	-0,48	1,36	A + E	Expansion
2018	-0,24	-0,24	**A + R**	
2019	-0,58	0,34	A + E	
2020	1,23	-1,81	P + R	Recession

Source: data from figure 2, interpreted by the author based on economic significance.

The formed pairs present a relatively atypical situation from the point of view of economic theory, respectively some of them are opposable to each other (anticyclic + expansionist or procyclic + restrictive), while economic theory leads to convergent pairs, such as anticyclic + restrictive or procyclical + expansionary, in relation to the state of the economic cycle. From this theoretical perspective, the positioning of the fiscal policy in relation to the state of the economic cycle, in Romania, in the analyzed period, requires anticyclical and restrictive characteristics, in the expansion period, and pro-cyclical and expansionist in the recession period, but predominates the fiscal policy characteristics uncorrelated with economic cycle. The synchronization of the fiscal policy characteristics with the position of the economic cycle is achieved in 2012, 2014, 2015 and 2018.

Based on the indicators presented and those derived from them (fiscal position and fiscal momentum), we find that there are certain particular characteristics, namely:

- fiscal consolidation, materialized in the reduction of budget deficits, was achieved in a period of recession, in which most converging pairs of fiscal policy characteristics with the economic cycle meet;
- the period of fiscal consolidation, which provided a wider fiscal space for the authorities, was not continued on the same trajectory, but through the aforementioned measures (reduction of tax rates, increase of current expenditures, limitation of public investments) did not have multiplier effects anticipated fiscal-budgetary.

3. Some conclusions

Starting from aspects of fiscal theory on the modalities of action of the fiscal policy regarding the stabilization of the economic cycle, respectively through discretionary fiscal policies, materialized in the implementation of measures and decisions, and / or through non-discretionary actions, based on the action of self-regulation mechanisms, we aimed at evaluating some characteristics of the fiscal policy implemented at national level, in relation to the economic evolution, from which we drew the following conclusions:

- the implementation of discretionary measures and decisions of a fiscal nature is, at least theoretically, constrained by the existence of a certain fiscal space, given by the institutional level of the structural deficit, more limited or more permissive (between 1% and 0.5% of GDP, in depending on the level of public debt).

In this context, Romania benefited from a more generous fiscal space (1% of GDP), with a debt level below 60% of GDP. The existing fiscal space and the advantage created in the period 2013 - 2015, were not managed prudently, being implemented a series of discretionary measures, with irreversible effects, which destabilized the fiscal policy, emphasizing its procyclical character;

- on the other hand, the action of the automatic stabilization mechanisms was manifested discreetly, only in the period 2012 - 2016, having a reduced contribution to the attenuation of the fluctuations of the economic cycle, situation explained by the lack of endowment of the Romanian fiscal system with such automatic adjustment mechanisms (fiscal regime with progressive tax rates). There is thus a reduced capacity to automatically stabilize the business cycle, and the use of discretionary measures and decisions to mitigate economic fluctuations is necessary, given that there is fiscal space for them.

A general conclusion is that fiscal policy has been predominantly discretionary and pro-cyclical, with little success in fulfilling its role of stabilizing the business cycle and with impulses that have frequently amplified fluctuations and destabilization of the economy.

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FINANCING EXPENDITURES IN EDUCATION - AN IMPORTANT STATE STRATEGY

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Abstract: *The financing of education is done according to the methods of financing expenditure from the state budget, as well as from the local budget, respecting the established norms regarding the provision of financial resources to the education units. In secondary education, the financing expenditure is being done through two budgets, respectively: the state budget - through School Inspectorates and the local budget - through town halls or country councils. The expenditures must fall within the budget approved at the beginning of the year. The development of education is carried out under the requirements of the different stages of economic and social evolution and with equal access to training for all members of society. Education is called to contribute to an increasing extent to the overall progress of society. The increase in public expenditure on education is due to the action of several factors: demographic, economic, social, political.*

Key words: *financing, expenditure, investments, education.*
JEL Classification: *I22, I25.*

1. Secondary education financing

The main source of education financing is the state budget.

The financing of the secondary education system based on cost standards highlights the situation of underfunding in which priority is given to those schools that have students with risk of dropping out of school, including students with disabilities and/or special needs, whose schooling requires a very wide range of educational and support interventions. Promoting inclusion policy at system level is not possible in the absence of additional budget allocations (Horga, Apostu and Balica, 2015). Special education is not financed at the standard/student cost level (Ministry of Education, 2021).

The financing expenditure sources from the educational units are: the state budget, the local budget, school fees, loans, donations, subsidies and own income in the educational units that can exploit the properties belonging to or from activities provided by third parties. Sources of financing the educational system are: sponsorships, donations and other forms of support provided by various companies, foundations, associations, etc. (Manole, 2008).

The state budget finances the expenses from: Title I Personnel expenses, Title II Material expenses, expenses with professional training of the staff, Title 57 Social aids, expenses regarding the student transport statement, Title 59 Scholarships, expenses regarding school scholarships for children in mainstream education.

The local budget finances the educational units from: Title II Material expenses (expenses regarding office supplies, cleaning materials, expenses regarding heating, lighting, water consumption, expenses regarding internet access, telephone, repairs, settlement of transport of the teaching and auxiliary teaching staff at and from the place of work for homeless staff in the locality where they work, etc. to Title 57, Social assistance, expenditure on food, clothing, footwear, sanitary equipment for children with special needs (special educational requirements), Title 59 Scholarships, expenditure on merit, tuition and social scholarships for children with special needs, Title 71 Development section, investment expenditure.

2. Public expenditures on education

Public expenditures express economic-social relations in monetary terms that are manifested between the state on the one hand and individuals and legal entities on the other hand, on the occasion of the distribution and use of the state's financial resources to fulfil its functions.

Public expenditures are manifested in the form of payments made by the state from resources mobilized in various ways for the acquisition of goods or services necessary to meet the objectives of state policy. The economic content of public expenditures is closely related to their destination. Thus, some expenditures express a final consumption of gross domestic product representing the value of payments made by public institutions in the form of current expenditures. And other expenditures express an advance of gross domestic product in the form of state participation in capital financing, both materially and in the immaterial sphere (Macarie, F., Note de curs).

Public expenditure, in the economic sense, is made out of reports and economic processes of distribution of the gross domestic product (GDP) materialized in the use of financial resources to achieve public interest objectives.

Education and professional training are the most important investments in human capital.In my opinion, the investment in human capital demonstrates the production efficiency. Investment in human capital is recovered in time. The personnel qualified in the domain in which they operate is much more efficient than the personnel who have an average specialization.

The expenditures regarding education are considered to be intellectual investments and they depict some distinct characteristics, such as:

- this category of investments is characterized by being long-term because the results appear after an extended period of time
- qualified teaching staff product
- they are exempt from moral wear and tear (Bistriceanu and Popescu, 2007).

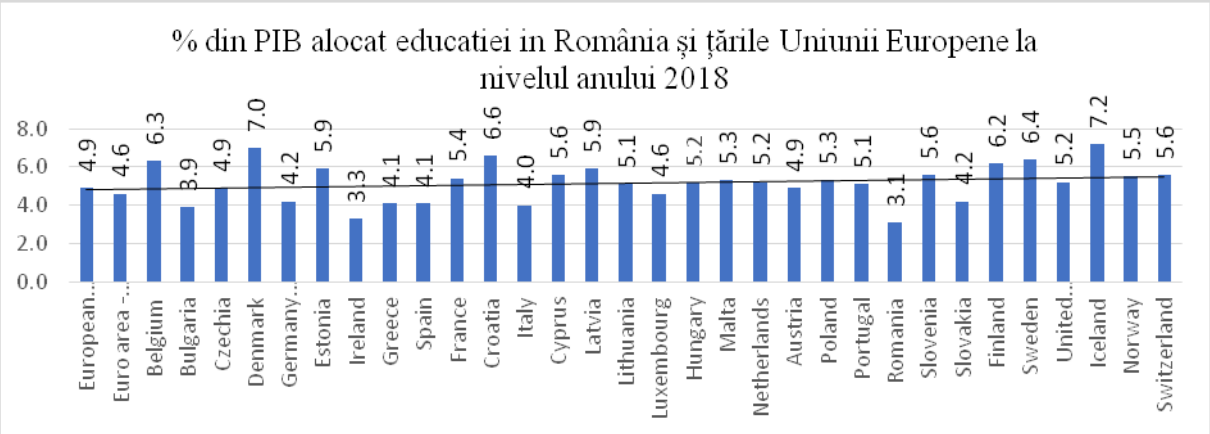
The education expenditures are actually intellectual investments. The intellectual investment derives from the existence of the capital intellectual. Intellectual capital is not achieved by the acquisition of means of production, but by educational actions that give the individual the possibility to capitalize in better conditions on his genetic heritage, skills, ability to work. The period of obtaining the effects in the case of intellectual investments coincides with one's active life (35-40 years), while the material investments last less than 10 years. Currently, in the Republic of Moldova, as well as in Romania, apart from the training achieved at national level, through school, very few enterprises give necessary importance to vocational training at work. Seen as investments, education expenditures make it necessary to calculate their efficiency. For this, it is necessary to know the elements that determine it: the effort and the effects, respectively the cost and the benefits. The costs contain the resources allocated to education from the budget or other funds, indirect expenses, lack of earnings, family expenses, etc. The benefits brought by education (evaluated using the age-earnings profile method, according to which it is considered that as the degree of training and qualification increases, the number of school years increases and the gains made), are equivalent to the sum of additional income due to education, calculated throughout the active life. In other words, the efforts are identified with investment expenditures that include both the actual educational expenditures and the expenditures for the maintenance and operation of educational units (current expenditures) along with the efforts made by economic agents, organizations or the population for education (Manole, 2008).

Tabel no. 1. The comparison regarding the GDP allocation for education in the European Union (2018)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Austria	5,5	5,5	5,4	5,3	5,4	5,2	5,2	5,2	5,3	4,9	4,8	4,8	4,7	4,8	5,1	5,1	5,0	5,0	5,0	4,9	4,9	4,9	4,8	4,8
Belgium	5,8	5,9	5,8	5,9	5,8	5,5	5,7	5,8	5,9	5,6	5,7	5,6	5,5	5,7	6,1	6,0	6,2	6,3	6,4	6,3	6,3	6,2	6,2	6,2
Bulgaria	3,6	3,3	3,3	3,3	4,1	4,1	3,6	3,7	4,2	4,0	4,1	3,6	3,6	4,0	4,1	3,6	3,4	3,3	3,7	4,1	3,9	3,4	3,5	3,5
Switzerland	5,4	5,5	5,4	5,3	5,3	5,2	5,3	5,6	5,7	5,5	5,4	5,2	4,9	5,0	5,4	5,3	5,3	5,5	5,5	5,5	5,6	5,6	5,6	5,6
Cyprus	4,7	4,9	5,1	5,1	5,1	5,1	5,1	5,4	6,0	5,8	5,7	5,6	5,6	6,0	6,4	6,5	6,3	5,9	6,4	5,6	5,6	5,5	5,3	5,2
Czechia	5,3	4,7	4,6	4,5	4,2	4,4	4,5	4,9	5,2	4,8	4,8	4,9	4,7	4,7	5,1	5,1	5,1	5,0	5,1	5,1	4,9	4,5	4,1	4,6
Germany (until 1990 former territory of the FI	4,1	4,2	4,2	4,2	4,1	4,1	4,1	4,2	4,2	4,1	4,1	4,0	3,9	3,9	4,3	4,4	4,3	4,3	4,4	4,3	4,2	4,1	4,1	4,2
Denmark	6,4	6,4	6,4	6,7	6,5	6,3	6,4	6,6	6,6	6,6	6,4	6,2	5,9	6,1	6,9	7,1	6,8	7,0	6,9	7,1	7,0	6,8	6,5	6,4
Estonia	7,3	7,0	6,5	6,8	7,1	6,4	6,3	6,5	6,3	6,2	5,9	5,9	5,7	6,5	7,0	6,5	6,0	6,1	5,9	5,5	5,9	5,7	5,7	6,2
Greece	3,6	3,6	3,9	3,6	3,7	3,9	3,7	3,9	4,3	4,1	4,2	3,6	3,6	3,8	4,1	4,1	4,4	4,5	4,5	4,3	4,1	3,9	3,8	3,9
Spain	4,3	4,3	4,2	4,1	4,2	4,1	4,0	4,0	4,0	4,1	4,0	4,0	4,0	4,2	4,6	4,5	4,4	4,2	4,1	4,1	4,1	4,1	4,0	4,0
European Union - 28 countries (2013-2020)	:	:	:	:	:	:	4,9	5,0	5,1	5,0	5,0	4,9	4,8	4,9	5,2	5,2	5,1	5,0	5,0	4,9	4,9	4,8	4,7	4,7
Finland	6,9	6,8	6,4	6,1	6,0	5,9	5,9	6,1	6,3	6,2	6,1	6,0	5,8	5,8	6,5	6,5	6,4	6,4	6,4	6,3	6,2	6,0	5,7	5,5
France	5,8	5,7	5,7	5,6	5,7	5,6	5,6	5,8	5,8	5,5	5,5	5,5	5,3	5,4	5,7	5,6	5,5	5,5	5,5	5,5	5,4	5,4	5,4	5,1
Croatia	:	:	:	:	:	:	5,3	3,7	3,7	3,6	3,5	3,4	3,3	3,2	3,6	3,7	3,6	3,7	3,9	3,8	6,6	6,6	5,3	5,3
Hungary	5,5	5,3	5,4	5,2	5,2	5,3	5,4	5,7	6,4	5,9	6,0	5,9	5,5	5,3	5,4	5,5	5,1	4,7	4,7	5,2	5,2	5,0	5,1	5,1
Ireland	5,6	5,6	4,4	4,2	4,1	4,0	4,1	4,0	4,1	4,1	4,1	4,0	4,3	4,7	4,7	4,6	5,1	4,9	4,7	4,3	3,3	3,3	3,2	3,2
Iceland	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	7,4	7,3	7,4	7,2	7,1	7,3	7,3
Italy	4,4	4,5	4,5	4,4	4,4	4,3	4,4	4,4	4,5	4,3	4,4	4,4	4,4	4,3	4,5	4,3	4,1	4,1	4,1	4,0	4,0	3,9	3,9	4,0
Lithuania	5,2	5,3	5,1	5,7	6,7	6,0	6,0	6,0	5,7	5,8	5,4	5,4	5,3	6,1	7,2	5,9	5,6	5,4	5,2	5,0	5,1	4,8	4,5	4,6
Luxembourg	4,5	4,5	4,6	4,8	4,6	4,3	4,5	4,7	5,0	5,0	5,0	4,6	4,5	4,8	5,5	5,7	5,6	5,8	5,1	4,7	4,6	4,5	4,5	4,6
Latvia	5,9	5,2	5,3	6,2	6,1	5,4	5,6	5,7	5,3	5,9	5,3	5,7	5,6	6,3	6,7	6,2	5,9	5,7	5,7	5,9	5,9	5,5	5,8	5,8
Malta	5,0	5,4	5,6	5,3	5,4	5,1	5,7	5,8	5,9	5,5	5,4	5,5	5,2	5,2	5,4	5,6	5,7	5,8	5,8	5,5	5,3	5,2	4,9	5,2
Netherlands	5,1	5,0	4,9	4,8	4,8	4,7	4,7	5,0	5,2	5,2	5,1	5,1	5,0	5,2	5,6	5,6	5,5	5,4	5,3	5,3	5,2	5,2	5,1	5,1
Norway	6,1	5,8	6,0	6,2	5,9	5,2	5,5	5,8	6,1	5,7	5,2	4,9	4,9	4,7	5,4	5,3	5,0	4,9	4,9	5,1	5,5	5,7	5,6	5,4
Poland	5,9	6,2	5,9	5,5	5,7	5,7	6,0	6,2	6,1	5,6	6,1	5,9	5,7	5,6	5,4	5,5	5,4	5,4	5,3	5,3	5,3	5,0	4,9	5,0
Portugal	5,5	5,8	6,0	6,0	6,4	6,3	6,4	6,6	6,5	6,6	6,6	6,4	5,9	6,0	6,5	6,7	6,1	5,4	5,5	5,3	5,1	4,8	4,6	4,5
Romania	3,3	3,6	3,1	4,0	3,1	3,1	3,9	4,0	3,6	3,6	3,6	4,1	3,9	4,3	3,8	3,3	4,1	3,0	2,8	3,0	3,1	3,3	2,8	3,2
Sweden	6,9	6,8	6,9	7,2	7,2	6,4	6,8	6,9	6,8	6,7	6,7	6,6	6,3	6,4	6,7	6,4	6,3	6,5	6,5	6,5	6,4	6,6	6,7	6,9
Slovenia	6,3	6,1	6,1	6,0	6,2	6,1	6,4	6,4	6,3	6,4	6,5	6,3	5,9	6,1	6,6	6,5	6,4	6,4	6,5	6,0	5,6	5,6	5,4	5,4
Slovakia	3,5	3,6	3,7	3,3	3,2	3,7	3,6	3,5	4,4	3,8	3,9	3,9	3,7	3,7	4,5	4,5	4,2	3,9	4,0	4,0	4,2	3,9	3,9	4,0
United Kingdom	4,4	4,2	4,2	4,1	4,4	4,7	5,0	5,5	5,6	5,6	5,5	5,6	5,7	5,8	6,2	6,3	5,8	5,6	5,3	5,4	5,2	5,1	4,9	4,8

Source: data collected and processed by the author, www.eurostat.eu

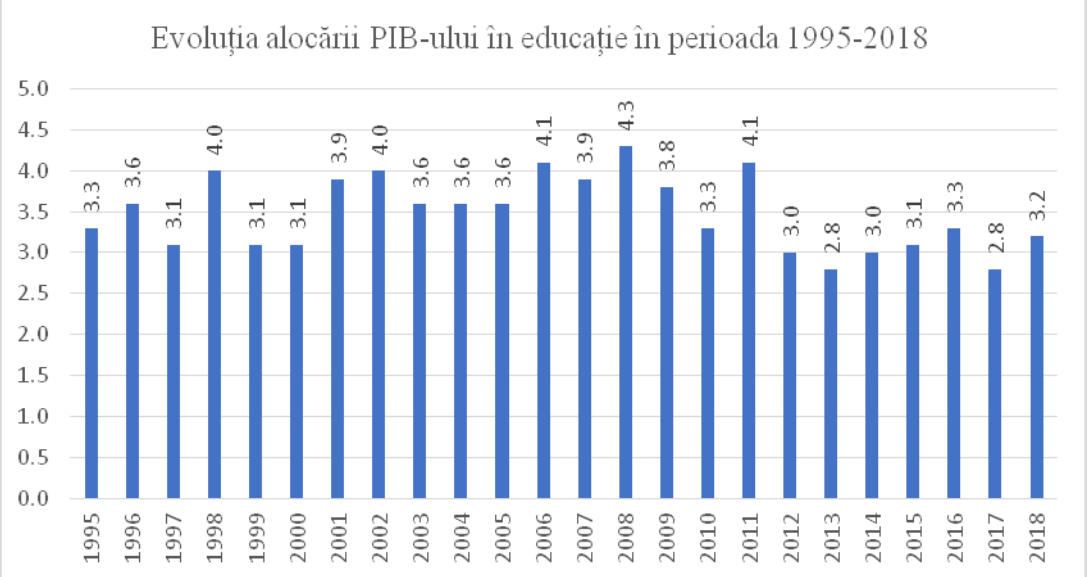
Figure no. 1 GDP allocated to education in EU countries



Source: data collected and processed by the author, www.eurostat.eu

Following the analysis, we note that the gross domestic product (GDP) in EU allocated to education in 2018, Iceland, Denmark and Croatia are in the first places, and at the opposite pole are Bulgaria, Ireland and Romania.

Figure no. 2. Evolution % of GDP allocated to education in Romania between the years 1995-2018



Source: data collected and processed by the author, www.insse.ro

Following the analysis, we notice that a higher % of GDP was allocated to education, but insufficient at intervals of 4 years.

3. The efficiency of public expenditures on education in Romania

The sizing methods applied at national level in financing expenditure must ensure a high level of economic efficiency. Hence, the major interest in tracking the connections made between education and gross domestic product (GDP) of each country, including the coverage of expenditure in GDP. The determination of the GDP coverage rate is determined as follows:

C= PIBxc, where:

C - public expenditures on education listed in the budget;

GDP- foreseen gross domestic product;

c - percentage of GDP for these expenditures (Filip, 2010).

In order to assess the efficiency of education expenditures, specific indicators are calculated on the basis of the allocated and achievable GDP over a period of time.

Public expenditures on education in Romania are considered intellectual investigations and represent a component of investments in human resources whose efficiency can be assessed differently. It is about the increase of gross domestic product obtained on account of the qualification of the teaching personnel and the term of recovery of the expenses for education represents the coefficient of economic efficiency (www.academia.edu)[10].

4. Conclusion

The main branch of public expenditures is represented by education expenditures. The correlation of the allocation of GDP to education in the European Union shows us that we must pay more attention to education. From the perspective of the efficiency of education expenditures, as public education expenditures increase, so will their efficiency, namely the increase in the number of qualified teachers, students and last but not least the labour force. In my opinion, Romanian education has results below expectations due to

underfunding, which represents a percentage of the allocated GDP. Investments in education (material, financial and human) should be given priority.

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INTERNATIONAL TRADE IN DIGITAL ERA

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Abstract: *Several features of the digital economy underline the evolution of this new phase of industrial and innovation policies. As data become an essential input in every aspect of economic activity, many digital technologies have the potential to alter economies and redefine innovation, and they are thereby considered to be general-purpose technologies. In particular, digital technologies foster collaboration and help to form innovative ecosystems. Firms in the digital economy rely less on physical assets and more on intangible assets. This makes firms much more scalable (i.e. capable of expanding), allowing them to reach global markets, and some market players have come to hold dominant positions in the digital sector.*

Keywords: *international trade, e-commerce, economic policies, romanian trade.*
JEL Classification: *F1, F6, F13.*

1. The digital age – and the need to catch up in this „race"

In the digital age, a growing number of governments have adopted policies aimed at boosting growth through innovation and technological upgrading. The domestic economic fallout linked to the COVID-19 pandemic is leading countries to strengthen these policies. There is a significant role for international cooperation to make countries' pursuit of such goals more effective, while minimizing negative spill-overs from national policies.

Historically, governments have sought to use policy to enhance long-term economic growth or societal welfare. These policies have always had to balance multiple objectives, from attempts to correct real or perceived market failures, to the dual task of managing change in mature sectors, while promoting emerging industries and technologies. Over the past two decades, countries have targeted these objectives with increasingly outward-oriented policies, in recognition that openness by access to larger markets and increased competition leads firms to innovate.

Trade and trade policy have historically been important engines for innovation. The certainty and predictability in global market conditions fostered by the multilateral trading system has made a major contribution to innovation and technology diffusion globally, notably by underpinning the rise of global value chains.

In many countries, government policies attempt to improve the business environment or to tilt the structure of economic activity toward sectors, technologies or tasks that are expected to offer better prospects for economic growth or societal welfare than would occur in the absence of such intervention.

Governments are generally motivated to implement policies at the sectoral level in order to boost longterm growth, increase incomes and productivity, and, in doing so, promote entrepreneurship, innovation, technology transfer, skill development and competition as specific policies to achieve these objectives.

Over time, there have been several phases of government policies, with considerable variance across economies. In the early days, industrial policies were narrowly defined as policies that aimed to build capacity mainly in the manufacturing sector.

The 1980s marked a gradual shift away from policies based on import substitution, infant industry protection and direct intervention into the production process, towards more outward-oriented policies. Some countries anticipated that shift even earlier.

In the 1990s, industrial policies further embraced open economy requirements: skills upgrading, acquisition of technological capacity, reduction of business and trade

costs, and infrastructure development, for example, as important mediumterm objectives. Industrial and trade policies aimed to improve the international competitiveness of firms and their integration into global value chains. Governments also introduced strong horizontal, or cross-sectoral, objectives aimed at providing the infrastructure for economic growth, although the horizontal focus did not completely displace sectoral policies, which remained a prominent feature of industrial policies.

By the turn of the millennium, the notion of industrial policy had shifted significantly, with the concept of "industrial" extending beyond the manufacturing sector and evolving towards a model of greater strategic collaboration between the private sector and governments, characterized by the relatively large presence of public-private partnerships and programmes to boost research and development (R&D).

Since the 2008-09 financial crisis, there has been an undeniable resurgence of government policies aimed at fostering change in the allocation of resources by economies, as reflected in the number of economies in which such policies have been developed and in the ambition of policy plans. "New industrial policies", "Industrial 4.0", "digital transition plans" have been designed in a context of profound industrial reorganization and parallel to the emergence of ground-breaking digital technologies and advanced manufacturing supply chains. For many countries, the principal aim is to modernize their economies, including their traditional manufacturing sectors, in a way that promotes the shift from mechanical and analogic production to digitally enabled production processes and services.

Hence a key and defining feature of "new industrial policies" is their prime focus on innovation, technological development and upgrading in the digital field.

Innovation can be understood as the transformation of an invention into marketable products and services, new business processes and organizational methods, as well as the absorption, adaptation and dissemination of novel technologies and know-how.

Innovation-oriented government policies are therefore public interventions to support the generation and diffusion of innovation.

In practice, technological upgrading and the digitalization of production processes and services are embodied in the economic development plan of many countries, while in others, a specific digital development plan and an innovation plan complements an industrial strategy.

Many developing countries have adopted proactive policy frameworks to promote digital development and technological innovation with a view, for example, to catching up on digital and telecommunications infrastructure, developing the digitalization of production and building capacity for a software/app economy reliant, in the main, on open-source technologies. Policy instruments evolve, certain policy tools and instruments are clearly integral to the digital economy: data policies, R&D support applied to digital technologies, skill and knowledge diffusion; other policy instruments such as investment incentives and intellectual property rights regimes are more "conventional" and need to adapt when applied to the digital sector. "New industrial policies" can also display "defensive" aspects, particularly in non-digital sectors, which are the most mature, and which may be subject to competition and technological transition. A snapshot of the use of government policy tools, based on public sources including the WTO Trade Monitoring Database, complemented by the Centre for Economic Policy Research (CEPR)'s Global Trade Alert database, shows the relatively active use of industrial and trade policy instruments of a "defensive" nature in traditional sectors such as minerals, metals and chemical industries, and to a lesser extent in textiles and clothing, electrical machinery, and transport equipment. This is notably the case for new border measures

including import tariffs, export duties and non-tariff measures, which account for onethird of the policy measures implemented since the 2008-09 financial crisis. The analysis of domestic support measures is less clear, as many of the domestic support measures are horizontal in nature.

Where they are identifiable, sector-specific support measures tend to focus on sectors such as transport equipment, minerals and metals. Investment policies, which are still at the heart of industrial strategies, are characterized by a trend to offer incentives and attract foreign direct investment (FDI), notably in increasingly popular special economic zones (i.e. areas in a country in which the business and trade laws differ from those of the rest of the country). Fiscal and financial incentives, such as tax or tariff exemptions and subsidized services, are the most prevalent investment promotion tools among economies of all development levels. Meanwhile, FDI policies adapt to the characteristics of the digital economy, in which firms no longer need to serve foreign markets by building large manufacturing capacity andhence firms' criteria to invest abroad emphasize skills and the quality of digital infrastructure.

The novelty of government policies in the digital age is perhaps in the requirement for a better articulation of the various policies supporting the establishment of a new digital supply chain. While ambitions to innovate in digital technologies may vary from one economy to another, many countries – including least-developed countries – do have explicit digital strategies to make the most of the digital technologies, with a view to producing software, providing e-services and/or participating in e-commerce. The concept of innovation in some developing countries may differ somewhat from that of the few frontier countries in this field, as in these cases innovation indicates adopting existing technologies rather than inventing new ones. For these countries, their objectives include catching up with more technologically advanced economies and building alternative capacity for software/ domestic "app" economies which can rely on opensource technologies.

2. World trade recovers uneven after COVID pandemic shock

Prospects for a quick recovery in world trade have improved as merchandise trade expanded more rapidly than expected in the second half of last year. According to new estimates from the WTO, the volume of world merchandise trade is expected to increase by 8.0% in 2021 after having fallen 5.3% in 2020, continuing its rebound from the pandemic-induced collapse that bottomed out in the second quarter of last year.

Trade growth should then slow to 4.0% in 2022, and the effects of the pandemic will continue to be felt as this pace of expansion would still leave trade below its pre-pandemic trend (Chart 1).

The relatively positive short-term outlook for global trade is marred by regional disparities, continued weakness in services trade, and lagging vaccination timetables, particularly in poor countries. COVID-19 continues to pose the greatest threat to the outlook for trade, as new waves of infection could easily undermine any hoped-for recovery.

"The strong rebound in global trade since the middle of last year has helped soften the blow of the pandemic for people, businesses, and economies," WTO Director-General Ngozi Okonjo-Iweala said. "Keeping international markets open will be essential for economies to recover from this crisis and a rapid, global and equitable vaccine roll-out is a prerequisite for the strong and sustained recovery we all need."

"Ramping up production of vaccines will allow businesses and schools to reopen more quickly and help economies get back on their feet. But as long as large numbers of people and countries are excluded from sufficient vaccine access, it will stifle growth,

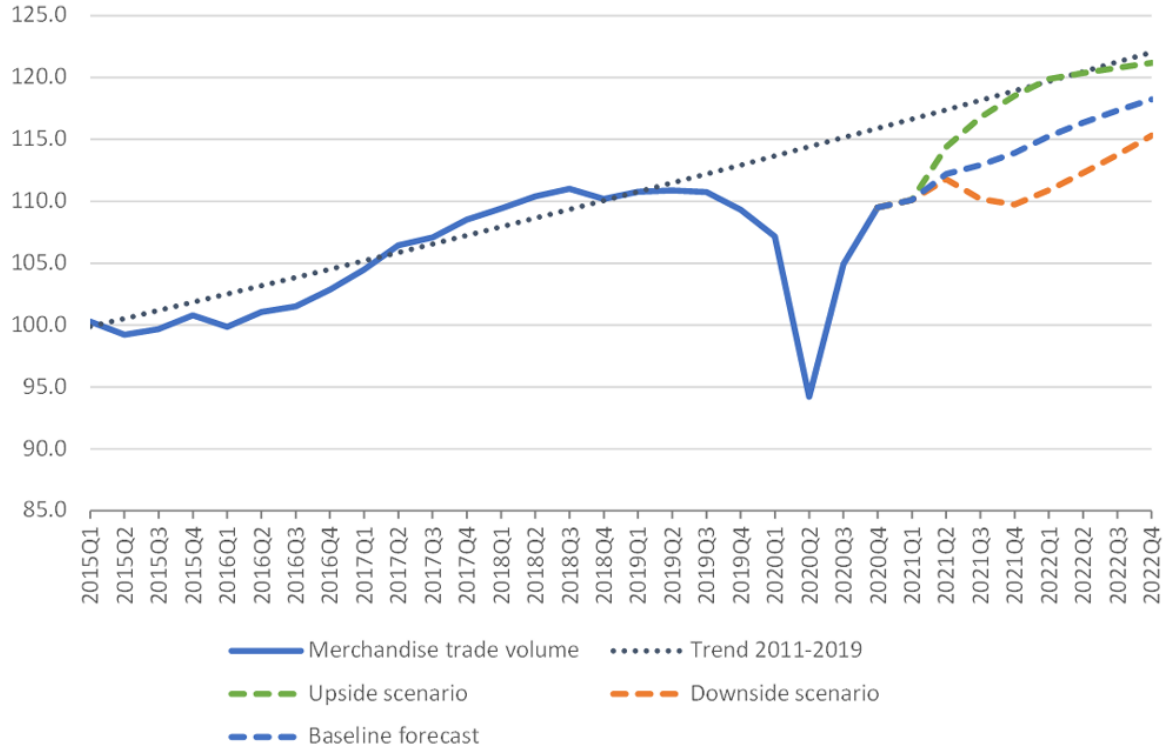
and risk reversing the health and economic recovery worldwide," she said.

The Director-General added that trade through value chains has helped countries access food and essential medical supplies during the crisis.

"Manufacturing vaccines requires inputs from many different countries. One leading COVID-19 vaccine includes 280 components sourced from 19 different countries," she said. "Trade restrictions make it harder to ramp up production. The WTO has helped keep trade flowing during the crisis. Now, the international community must leverage the power of trade to expand access to life-saving vaccines."

Chart 1. World merchandise trade volume, 2015Q1-2022Q4

Index, 2015=100



Source: WTO and UNCTAD for trade volume data; WTO for forecasts

Short-term risks to the forecast are firmly on the downside and centred on pandemic-related factors. These include insufficient production and distribution of vaccines, or the emergence of new, vaccine-resistant strains of COVID-19. Over the medium-to-long term, pub lic debt and deficits could also weigh on economic growth and trade, particularly in highly indebted developing countries.

The forecast illustration in Chart 1 shows two alternative scenarios for trade. In the upside scenario, vaccine production and dissemination would accelerate, allowing containment measures to be relaxed sooner. This would be expected to add about 1 percentage point to world GDP growth and about 2.5 percentage points to world merchandise trade volume growth in 2021. Trade would return to its pre-pandemic trend by the fourth quarter of 2021. In the downside scenario, vaccine production does not keep up with demand and/or new variants of the virus emerge against which vaccines are less effective. Such an outcome could shave 1 percentage point off of global GDP growth in 2021 and lower trade growth by nearly 2 percentage points.

For the whole of 2020, merchandise trade was down 5.3%. This drop is smaller than the 9.2% decline foreseen in the WTO's previous forecast in October 2020. The

better than expected performance towards the end of the year can partly be explained by the announcement of new COVID-19 vaccines in November, which contributed to improved business and consumer confidence.

The volume of world merchandise trade plunged 15.0% year-on-year in the second quarter of 2020 (revised up from -17.3 % in October) as countries around the world imposed lockdowns and travel restrictions to limit the spread of COVID-19. Lockdowns were eased in the second half of the year as infection rates came down, allowing goods shipments to surge back to near 2019 levels by the fourth quarter.

Faster trade and output growth in the second half of 2020 was supported by major government policy interventions, including significant fiscal stimulus measures in the United States. These measures boosted household incomes and supported continued spending on all goods, including imports. In addition, many businesses and households adapted to the changing circumstances, finding innovative ways to sustain economic activity in the face of health-related restrictions on mobility. Effective management of the pandemic limited the extent of the economic downturn in China and other Asian economies, allowing them to continue importing. These actions helped prop up global demand and may have prevented an even larger trade decline.

Trade in nominal US dollar terms fell even more sharply than trade in volume terms in 2020. World merchandise export values were down 8% compared to the previous year, while commercial services receipts tumbled 20%. Services trade was especially weighed down by international travel restrictions, which prevented the delivery of services requiring physical presence or face-to-face interaction.

The impact of the pandemic on merchandise trade volumes differed across regions in 2020, with most regions recording large declines in both exports and imports. Asia was the sole exception, with export volumes up 0.3% and import volumes down a modest 1.3%. Regions rich in natural resources saw the largest declines in imports, including Africa (-8.8%), South America (-9.3%) and the Middle East (-11.3%), probably due to reduced export revenues as oil prices fell around 35%. In comparison to other regions, the decline in North American imports was relatively small (-6.1%).

In 2021, demand for traded goods will be driven by North America (11.4%) thanks to large fiscal injections in the United States, which should also stimulate other economies through the trade channel. Europe and South America will both see import growth of around 8%, while other regions will register smaller increases.

Much of global import demand will be met by Asia, exports from which are expected to grow by 8.4% in 2021. European exports will increase nearly as much (8.3%), while shipments from North America will see a smaller rise (7.7%). Strong forecasts for export growth in Africa (8.1%) and the Middle East (12.4%) depend on travel expenditures picking up over the course of the year, which would strengthen demand for oil. Meanwhile, South America will see weaker export growth (3.2%), as will the Commonwealth of Independent States (CIS), including certain former and associate Members (4.4%).

As we can see, the chart 2 shows quarterly merchandise export and import volume indices by region for 2015 to 2020, plus projections for 2021 and 2022. In the second quarter of 2020, North America and Europe saw sharp year-on-year declines in export volumes, down 25.8% and 20.4% respectively. By the fourth quarter these regions had recovered much of their lost ground, with respective year-on-year declines of just 3.0% and 2.4%. Middle Eastern exports also fell precipitously in the second quarter as oil consumption slumped worldwide due to restrictions on international and domestic travel.

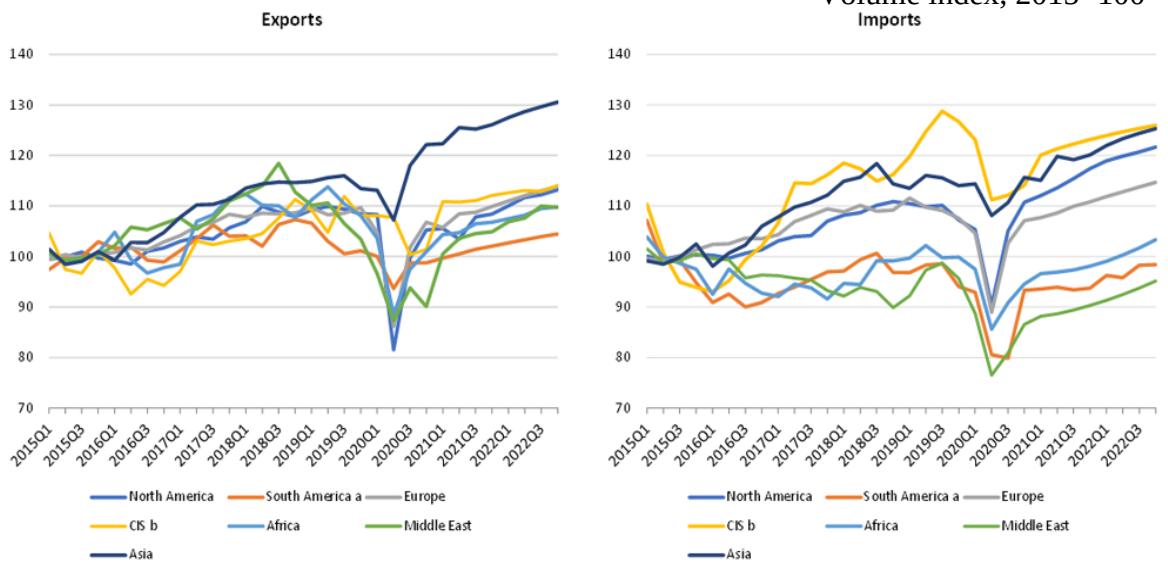
Asian exports saw a much smaller decline of 7.2% in the second quarter, but by the fourth quarter they were up 7.7% compared to the previous year. Their rapid recovery can

be explained by the relatively small impact that COVID-19 had on certain Asian economies, and by the fact that the region has been supplying the world with consumer goods and medical supplies during the pandemic, driving up regional export totals.

In the forecast periods we see a divergence between regions with faster and slower trade growth. On the import side, Africa, South America and the Middle East will continue to see their merchandise trade stagnate while other regions will pull ahead. On the export side, most regions will only see modest gains while Asia continues to supply large quantities of goods to global markets.

Chart 2. Merchandise exports and imports by region, 2015Q1-2022Q4

Volume index, 2015=100



a Refers to South and Central America and the Caribbean.
b Refers to Commonwealth of Independent States, including certain associate and former member States.
Source: WTO and UNCTAD.

In terms of the quarterly evolution of merchandise trade over the course of 2020 the WTO reports indicates that the value of world trade in manufactured goods was 6% higher in the fourth quarter of 2020 than in the same period of the previous year. This resurgence may be attributable to the resumption of factory operations in alignment with safety measures required to protect workers from COVID-19. Trade in agricultural products was up by a similar amount over the same period. In contrast, the value of Fuels and mining products trade was still down 19% in the fourth quarter. The value of merchandise trade overall was up slightly compared to the previous year (2%), but this increase might be exaggerated due to the fact that world trade was already slowing in the fourth quarter of 2019, before the pandemic.

Most categories of manufactured goods saw significant gains in the second half of 2020. World trade in Iron and steel was down 17% in the third quarter, but this decline was reduced to 2% by the fourth quarter. Iron and steel trade is indicative of broader economic conditions as these products are heavily used in both automobile manufacturing and building construction, both of which were hit hard by the pandemic.

Strong growth in textiles trade in both the third and fourth quarter probably reflects high demand for medical face coverings, which is included in this category. Electronic goods including computers also saw steady growth of 12% in the second half of 2020,

reflecting strong demand as households and businesses upgraded equipment to facilitate working remotely.

Year-on-year changes in world commercial services trade by major category, for the whole of 2020, shows that Travel and Transport services were down 63% and 19%, respectively. Meanwhile, the category Other commercial services (including financial services and computer services) held up well, falling only 2%. Finally, Goods-related services fell 13%. Transport and Travel services were directly impacted by containment measures designed to limit the spread of COVID-19, many of which remain in place or have been tightened in response to the resurgence of the disease.

The number of daily international flights fell around 80% in the first quarter of 2020 as countries closed their borders to reduce the spread of COVID-19. This number gradually picked up as cases declined and people resumed limited travel. The end of 2020 saw an uptick in flights as people travelled to meet friends and family for seasonal holidays, but a resurgence of the virus has reduced flights again in 2021. International flights are closely related to travel services, but also to transport services and goods trade, as passenger aircraft frequently carry air freight shipments.

In contrast to international flights, seaborne transport has been steadier during the pandemic. The number of port calls dipped in February and April of last year as well as in January of this year, reflecting peak periods of infection. The recent dip is worrying since countries have become increasingly reliant on international trade to obtain vital necessities such as food and medicine.

Daily prices of copper futures contracts declined sharply in March 2020 as news of the pandemic spread, but have risen since then, reflecting improving economic prospects. Copper feeds into the manufacture of electronics, demand for which has been strong as people and businesses have invested in technology to allow remote work. An uptick in November of last year probably reflected expectations of stronger economic growth after the announcement of new vaccines against COVID-19. The recent rise in 2021 may reflect expectations that stimulus measures in the US and elsewhere will boost economic growth.

3. The future of the global trade

The world trade has been impacted of the story of the container ship that blocked the Suez Canal for nearly a week. As a consequence, hundreds of ships were backed up in a traffic jam. Others went around the Cape of Good Hope adding considerable number of days and costs to their journey. Estimates said nearly $10 billion dollars of trade was being affected each day. The fact that the Ever Given was able to cause so much disruption is a sign that global merchandise trade is relatively robust — and that global supply chains have held up through the pandemic.

The word ‘relatively’ is important: the volume of world merchandise trade still contracted by 5.3% in 2020. But this contraction was smaller than initially feared.

Following a sharp decline in the first half of the year, trade recovered more quickly than expected in the second half of 2020. This rebound has continued, and the WTO’s baseline trade forecast foresees an 8% increase in the volume of world merchandise trade for 2021.

Trade growth is expected to slow to 4% in 2022. It's important to note that this would still leave trade below its pre-pandemic trend.

COVID-19 continues to pose the greatest threat to the outlook for trade. New waves of infection could easily further undermine any hoped-for recovery.

The rapid development of effective vaccines has given the world a realistic chance of stopping this disease in its tracks and jump-starting the world economy at the same

time, but this opportunity could be squandered if large numbers of countries and people do not have equal access to vaccines. A rapid, global and equitable vaccine roll-out is the best stimulus plan we have for the strong and sustained economic recovery that we all need.

Ramping up the production and deployment of vaccines in all countries will allow businesses and schools to reopen more quickly and help economies get back on their feet.

Depending on how quickly we can bring the pandemic to an end, trade could either see a major resurgence over the next two years, or it could experience a weaker, more prolonged recovery.

Accelerated vaccinations would allow containment measures to be relaxed sooner, which could raise trade growth up to 2.5 percentage points above the baseline forecast in 2021 — returning trade to the pre-pandemic trend.

On the other hand, if supply shortages continue, or if vaccine-resistant strains of the virus emerge, trade growth could end up 2 percentage points below the baseline forecast.

Overall, the balance of risks to the forecast is considered to be on the downside, but upside potential exists if countries make wise policy choices.

Large monetary and fiscal injections in advanced economies helped prevent a bigger downturn last year — a major factor in why growth and trade have both outperformed projections from last year. But these support measures will not be enough to bring an end to the crisis. Only by ramping up production of vaccines and making them more widely available can we hope to get the world economy back to full speed.

The possibility that many countries will be left behind as we emerge from the crisis is a major concern. Despite the broad-based nature of the global economic recovery to date, there are signs of divergence in trade flows across regions.

If the current WTO forecast is realized, exports from Asia at the end of 2021 would be 10% higher than they were in 2019, while most other regions would see smaller increases or modest declines.

For example, exports of Europe and North America's would be steady, while shipments from Africa and the Middle East would be down 4% and 3%, respectively.

The import side would see declines in South America (-3%), Africa (-2%) and the Middle East (-6%), while Asia (+5%) and North America (+7%) would increase, reflecting the relative strength of their economic recoveries.

In this context, a rise in protectionism would be damaging not just to global economic growth but to vaccine production as well. Manufacturing vaccines requires inputs from many countries. One leading COVID-19 vaccine manufacturer says that their vaccine needs 280 components sourced from 19 different countries. You can see how complicated the supply chain still is. Trade restrictions would make it even harder to ramp up production, leading to more unequal economic and health outcomes.

The WTO has helped to keep trade flowing during the crisis. Now, the international community must leverage the power of trade to expand access to life-saving vaccines.

4. Conclusions

The COVID-19 pandemic is a public health crisis, but it has also acted as a catalyst for economic, social and behavioural changes. The measures to contain the spread of COVID-19 are likely to accelerate the shift to digital platforms and technologies significantly. The enforcement of social distancing, lockdowns and other measures in response to the COVID-19

pandemic has led consumers to ramp up online shopping and use of social media and of other means of digital communication. Online e-commerce platforms have registered significant growth since the start of the pandemic. Amazon, a US-based e-commerce

company, announced revenues of US$ 75 billion in the first three months of the year, averaging US$ 33 million an hour. MercadoLibre, Latin America's leading e-commerce technology company, reported a 70.5 per cent year-over-year increase in net revenue in the first quarter of 2020. The Chinese e-commerce giant Alibaba reported that its sales grew by 22 per cent in the first three months of 2020, despite virus-related restrictions denting activity.

Much of the digital innovation is taking place in developing countries. In Senegal, the Ministry of Trade is partnering with the private sector to facilitate delivery of essential goods and services through e-commerce. In Uganda, the Ministry of Information and Communications Technology and National Guidance has called to develop digital solutions in the fight against COVID-19 to support health systems and public service delivery.

Digital payments help people to avoid potential COVID-19 infection while keeping economies running, and they also help to put stimulus funds into consumers' hands more rapidly. For example, local governments in China have distributed vouchers through WeChat Pay to encourage immediate spending. The digital option also applies to the transfer of remittances, since restrictions to mobility during the COVID-19-related lockdowns limited the possibility of sending cash remittances. In addition, central banks have temporarily permitted companies and banks to lower or scrap transaction costs and fees on digital payments and mobile money transfers in order to encourage the use of mobile money in preference to cash (WTO, 2020).

Spurred by social distancing and stay-at-home requirements, digital services that can be delivered electronically have flourished. An average of 40 per cent of workers in the European Union and the United States have worked from home due to the pandemic, although the rate of telework has been lower in developing economies. In particular, levels of remote work have significantly increased in sectors such as IT services, professional and business services, and financial activities. To make teleworking possible, firms invested in digital transformations, especially in the services sector. Workers have learned to use collaborative software

Spurring innovation in the digital field, whether "new in the world" or "new in the country", is at the core of many new industrial policies adopted in countries at all levels of development in recent years.

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THE IMPACT OF POPULATION FINANCIAL INDICATORS ON THE NATIONAL ECONOMY

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Abstract: *Through this paper we aim to create an image both in terms of description and in terms of graphical representation, with multiannual coverage (2007-2019), the evolution of financial indicators of the population and their impact on the national economy. The main objective is to establish the basic pillars of the concentrated table of financial indicators of the population in terms of the values of absolute primary indicators, based on which were calculated the values of the three relevant relative indicators that characterize the financial situation of the population, and which indicators influence directly the potential and performance of the national economy. The results of the paper are given by the evolution of the primary indicators regarding the characterization of the financial status of the population in the period 2007-2019, especially for the active population, and are directly influenced by the quality of employment of eligible and employed adults, and also sustenability of the national economy.*

Keywords: *financial indicators, sustainability, national economy.*
JEL Classification: *G17, Q01, O11.*

1. Introduction

The work is carried out in parallel with the permanent development of its own database, with the intention of creating long series of data, as a basis for dynamic analysis, and for the further development of new applications. The consistency of the set of indicators was built on the basis of data from the National Institute of Statistics, the Ministry of Public Finance and the National Bank of Romania, regarding both the definition of the primary database and the calculation of dynamic series of proposed indicators. Moreover, the harmonization of data in 2019 was also given by the fact that some of the primary indicators are reported in 2020, but some of these primary indicators stop as compared to 2019. The evolution of the financial situation of population was surprised by building and calculating a set of 16 indicators. These indicators were proposed by the CCFM and are based on the main data sources at macroeconomic level (annual reports of the National Bank of Romania and the National Institute of Statistics, as well as data from the National Accounts). Based on these status indicators, a series of useful information was presented that can be correlated with macroeconomic statistics, national accounting, financial accounting and banking statistics, for the period 2007-2019.

Methodology of research

For the construction of the relevant indicators selected for the purpose of assessing the financial situation of the population, for the period 2007 - 2018, the following absolute indicators were used:

AFE = Total financial assets, receivables, of the residential sectors, including, cash, deposits, loans, securities, etc.

AFP = Gross financial assets: financial assets held by the population at a given time, regardless of nature, maturity, degree of risk and forms of holding; it is also called the financial wealth of the population; is both a flow and a stock indicator, representing the receivables of the population in the form of bank investments, IPB, or financial investments, IPF, ie, cash, demand deposits, term deposits, short-term securities, long-term securities , loans, etc .;

LAC = Liquid financial assets: cash (from income) + transferable deposits + securities with a term of less than 3 months, held by the population, in order to be able to repay the loans committed at maturity.

CHB = Total monetary expenditure of the population: expresses the expenditures related to the consumption of goods and services, for investments, taxes and financial expenses, including interest.

CHD = Interest expenditure: expresses the monetary expenditure made annually by the population for the payment of interest

NPP = Net financing capacity of the economy, all resident sectors, positive or negative (financing required): represents the net financing capacity of the economy, as the difference between all financial assets, financial receivables of resident sectors, and all their financial debts, the difference can be, as a rule, positive, but sometimes also negative, signifying a need to finance the economy.

CNP = Net financing capacity of the population, positive or negative (financing required): represents the net financing capacity of the population, as the difference between the financial assets, the financial receivables of the population, and its financial debts, the difference can be, as a rule, positive, but sometimes also negative, signifying a need for financing the population.

CRP = Bank loans received by the population: the total bank loans received by the population, but also loans on other banking instruments, regardless of maturity and risks.

CTP = Total financial receivables of the population: financial saving, total financial receivables of the population, regardless of nature, instrument and institution.

DEP = Bank deposits of the population: the total of bank deposits and other bank savings instruments of the population, regardless of maturity, risks or income generated.

DTP = Financial debts of the population: total financial debts of the population, regardless of nature (banking or non-banking), instrument and institution, recorded at the end of the year.

ECF = Financial savings: the total savings, through financial instruments of any kind, held by the population at the end of the year, in the form of their banking and financial assets, constituting the total financial receivables of the population (CTP).

FBP = Gross fixed capital formation of the population: represents the value of durable goods intended for purposes other than consumer, utilitarian, with a certain value, acquired by the population, usually through investments, to be used for a period longer than a year

IFV = Financial investments of the population, banking and non-banking: the monetary value of the financial investments of the population, banking and non-banking, made over a period of one year, meaning the acquisition of banking and financial saving instruments.

IPF = Investments in the financial market, in various financial securities, of the population, in shares and participations (ACP) and in debt securities, such as bonds (TLO)

IVF = Total physical investments of the population (IVT - IFV): the monetary value of the total physical investments of the population of the population, made during a period of one year, meaning payments for the acquisition of durable goods, with a lifespan over one year;

IVT = Total investments of the population: total investments of the population, made during a period of one year (IVF + IFV)

PFE = Total financial liabilities, commitments, debts of the institutional sectors of the economy, according to SNA, on the whole the difference between the receivables and financial debts of the sectors generating a negative or positive balance, the negative balance representing a need for external financing.

PFP = Financial liabilities of the population, commitments, at a given time, regardless of nature, maturity, degree of risk and forms of holding; it is also called the financial debt of the population; it is both an indicator of flow and stock, representing

commitments, debts of the population in the form of liquid debts, in the short, medium and long term, banking and non-banking.

GDP = Gross domestic product: the main macroeconomic aggregate of the national accounting system that expresses the gross value added of goods and services reached in the last stage of the economic circuit, which were produced within a country by domestic and foreign economic agents in a certain period time, usually a year.

POP = Population: a group of individuals gathered by citizenship ties and by establishing domicile on the territory of the state, in relation to which the latter exercises its sovereign power the entire set of data from which a sample is selected and in connection with which the auditor wishes to formulate its conclusions, statistically being evaluated at the end of the year, according to the data from the Statistical Yearbook.

Rdi = Interest rate collected (on deposits), which expresses the interest rate collected by the population on savings instruments, such as bank deposits, purchased financial securities, etc.

Rdp = Interest rate paid (on loa*ns) which expresses the interest rate paid by the population on committed loans, such as bank loans.*

VBP = Cash income of the population: the total cash income obtained by the population, for periods of one year, from any available source, such as cash income, but also other liquidity available during the year.

VDB = Gross disposable income of the population: the balance of the income account and measures the part of the created value that the population has for final consumption and gross economy (from which it achieves financial savings).

The relevant indicator sheets are presented below.

Indicator 1 (calculation procedure)

1. Section: I. Financial macroeconomics;
2. Chapter: 4. Assessing the financial condition of the population;
3. Paragraph: 4.3. Evaluation of the saving structure;
4. Name: The rate of financial saving of the population;
5. Symbol: Ref.
6. Degree of synthesis: derived indicator;
7. Data source: Financial Accounts - NBR and Statistical Yearbook;
8. Calculation formula:

$$\text{Re}\, f = \frac{ECF}{PIB} \times 100$$

9. *Explanations of the previous notation:*

• ECF = total savings, through financial instruments of any kind, held by the population at the end of the year, in the form of their banking and financial assets, constituting the total financial receivables of the population (CTP).

• GDP = Gross domestic product: the main macroeconomic aggregate of the national accounting system that expresses the gross value added of goods and services reached in the last stage of the economic circuit, which were produced within a country by domestic and foreign economic agents in a certain period of time, usually one year.

10. Economic significance: it is an indicator of stock; the indicator highlights the financial saving per inhabitant, the saving potential of the population; the indicator can be determined by stock or flow (savings made during the year).

11. Utility in economic analysis: allows the analysis on the whole, but also on types of savings (through indicators derived from detail) of the saving potential of the population and comparative analysis in time or space.

12. How to use in the paper: the indicator can be correlated with other generic indicators of financial saving of the population, but also with indicators specific to the

financial status of the population; at the same time, the indicator can be integrated in the network of indicators for evaluating the financial status of the population, which highlights their interconnections and co-determinations in the perspective of a complex synthetic evaluation indicator.

Indicator 2 (calculation procedure)

1. Section: I. Financial macroeconomics;
2. Chapter: 4. Assessing the financial condition of the population;
3. Paragraph: 4.3. Evaluation of the saving structure;
4. Name: Coefficient of inclination to save the population;
5. Symbol: Cie;
6. Degree of synthesis: derived indicator;
7. Data source: Financial Accounts - NBR and Statistical Yearbook;
8. Calculation formula:

$$Cie = \frac{(\Delta ECF / ECF_b)}{(\Delta VBP / VBP_b)}$$, where "b" means the basic period

9. Explanations of the previous notation:

• ECF = total savings, through financial instruments of any kind, made by the population during the year, in the form of their banking and financial assets, constituting the total financial receivables of the population (CTP).

• GNP = total monetary income obtained by the population, for periods of one year, from any available source, such as income of any monetary nature, but also other liquidity available during the year

10. Economic significance: it is an indicator of flow; the indicator highlights, through flows, the degree of saving of the monetary incomes of the population and, implicitly, the dynamics of its financial potential, being useful for the knowledge and design of the banking and financial policies.
11. Utility in economic analysis: allows the analysis of the willingness to save of the population, being useful for the correlative analysis with the indicators of income, consumption of the population, and with the banking indicators specific to the population, of the dynamics of saving and investment potential of the population.
12. How to use in the paper: the indicator can be correlated with other generic indicators of saving and financial indebtedness of the population, but also with indicators specific to the financial status of the population; at the same time, the indicator can be integrated in the network of indicators for assessing the financial status of the population, which highlights their interconnections and co-determinations in the perspective of a complex synthetic evaluation indicator.

Indicator 3 (calculation procedure)

Section: I. Financial macroeconomics;
1. Chapter: 4. Assessing the financial status of the population;
2. Paragraph: 4.3. Evaluation of the saving structure;
3. Name: The coefficient of financial indebtedness of the population;
4. Symbol: Chip;
5. Degree of synthesis: derived indicator;
6. Data source: Financial Accounts - NBR and Statistical Yearbook;
7. Calculation formula:

$$Cip = \frac{DTP}{POP}$$

8. Explanations of the previous notation:

• DTP = total financial debts of the population, regardless of nature (banking or non-banking), instrument and institution, recorded at the end of the year.
• POP = total population: a group of individuals gathered through citizenship ties and by establishing domicile on the territory of the state, in relation to which the latter exercises its sovereign power the entire data set from which a sample is selected and in connection with which the auditor wants to formulate his conclusions, statistically being evaluated at the end of the year, according to the data from the Statistical Yearbook
9. Economic significance: the indicator highlights the financial debt per inhabitant, the indebtedness of the population, which depends, first of all, on the quality of the financial system and the level of income and the purchasing power of the population; the indicator can be determined on stock or on flow (debts incurred during the year).
10. Utility in economic analysis: allows the analysis on the whole, but also on types of indebtedness (through indicators derived from detail) of the indebtedness capacity of the population and the comparative analysis in time or space.
11. How to use in the paper: the indicator can be correlated with other generic indicators of saving and financial indebtedness of the population, but also with indicators specific to the financial status of the population; at the same time, the indicator can be integrated in the network of indicators for evaluating the financial status of the population, which highlights their interconnections and co-determinations in the perspective of a complex synthetic evaluation indicator.

Research results

The calculation of the absolute primary indicators in the period 2007 - 2019 was performed based on the existing data in the Financial Accounts of the National Bank of Romania and the National Accounts of the National Institute of Statistics.

Calculation of the values of the absolute primary indicators

The realized values of the absolute primary indicators, based on which the values of the 16 relevant relative indicators that characterize the financial status of the population, for the years of the analyzed period, were presented in the table below.

According to the Table below, in 2019, the primary indicators registered mainly higher values compared to the previous year. There are also indicators with values lower than 2018, respectively Bank deposits of the population, Financial saving, Gross formation of fixed capital of the population, Interest rate received by the population on savings instruments, Financial investments of the population, Population[1].

The population's financial assets increased in 2019, influenced mainly by cash and deposits (the main financial receivable of the population) and the increase of the stock of the "other receivables" component (due to the increase in the flow of operations such as participation interests, equity transactions, as well as shareholder transactions).

Financial assets in the category of loans granted by households have increased, mainly due to the acquisition of government securities under the "Treasury" program, issued by the Ministry of Public Finance in 2019.

Regarding the financial commitments of the population, they increased in 2019, compared to the previous year, the main financial commitments being loans and other amounts to be paid. The share of loans contracted by households in GDP decreased in 2019, compared to 2018, a cause being the NBR Regulation no. 6/2018 for the amendment and completion of the Regulation of the National Bank of Romania no. 17/2012 on some credit conditions, with subsequent amendments and completions, which establishes a debt

[1] *For the indicator "Population" we recalculated the value for the years 2017 and 2018, according to the Press Release no. 77/19 March 2020, INS. By default, the values of the dependent indicators, the Income and Money Expenditures of the population (VBP and CHB) registered small changes for the mentioned years..*

ceiling for loans granted to individuals (measure applied since the beginning of 2019). The share of loans in the total financial commitments of the sector had a similar trend.

Table 1.The evolution of the primary indicators regarding the characterization of the financial status of the population in the period 2007 - 2019

Indicator	UM	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
AFP s	mil.lei	410503	413696	334346	337052	349705	416456	538323	641026	675641	720233	770649	738759	919817
AFP f	mil.lei	32457	144882	-8349	25885	70943	83271	103083	20327	137318	44592	50416	-31890	181058
AFE f	mil.lei	291730	331335	148074	126276	197748	159740	89456	16902	46308	110372	82474	64146	320653
ALC s	mil.lei	78920	97462	109002	117502	129722	137460	149317	161737	176782	202739	222592	239304	272803
CHB	mil.lei	136480	143443	153427	154003	158928	165379	173291	183398	209825	254450	263114	347072	392497
CHD	mil.lei	8766	12890	12078	10544	10367	8665	8068	6660	6147	6379	7241	7531	9767
CNE f	mil.lei	-49277	-55186	-23108	-18155	-28041	-8334	7471	13488	14683	-4096	-17518	-14515	-10492
CNP f	mil.lei	8701	13650	21321	32435	26139	46223	90559	16106	11800	64151	-22287	25056	26135
CRP s	mil.lei	80460	113589	116452	120195	121578	122628	122130	120513	107953	113037	114283	119436	160000
CTP s	mil.lei	410503	413698	334345	290620	313666	370742	461740	493591	516051	563012	584969	624747	680974
DTP s	mil.lei	101479	137544	137835	151112	158433	163460	165072	161484	151870	189838	205594	219986	233185
DEP s	mil.lei	64990	80518	94930	105388	113068	123595	132287	139559	146780	163462	178660	241686	222399
ECF s	mil.lei	281719	268151	267400	258937	275787	329856	412876	436677	456547	499919	530414	534176	532039
FBP	mil.lei	8284	9284	9625	29886	30836	33345	35348	34333	35206	34044	36053	37098	36913
IFV f	mil.lei	9808	12257	4163	15413	17625	40629	84756	19767	9420	9919	10207	11197	10525
IPF	mil.lei	236389	220124	245714	133568	130908	163880	157090	139319	133049	123137	155152	192389	236638
IVF f	mil.lei	27248	37814	26599	23217	25049	19325	7155	1101	7987	58169	55870	41954	48223
PFE f	mil.lei	211552	156639	90358	75978	102196	77445	99516	25177	46989	151464	71223	22234	36949
PFP f	mil.lei	29592	28140	-1738	-4442	1478	563	665	2556	6674	14429	12191	15739	13339
PIB	mil.lei	416007	514007	501139	533881	565097	595367	637456	668590	712588	765135	856727	940478	1059803
POP	mii	22562	22542	22516	22481	22434	22391	22346	22298	22242	22223	22215	22197	22175
Rdp	%	13,30	15,80	17,30	14,11	14,00	13,26	11,32	9,47	5,69	5,64	5,93	5,94	7,69
Rdi	%	6,70	9,55	11,89	7,29	6,24	5,31	4,00	2,92	1,24	0,60	0,69	2,14	1,97
VDB	mil.lei	251208	330147	313038	321980	324227	336621	448548	470408	426795	434358	492590	611554	667122
VBP	mil.lei	200549	265161	279977	276993	255752	171336	180202	250692	239711	296852	310832	400611	458224

Source: databases of the National Bank of Romania (from the National Financial Accounts 2007 - 2019 and the monthly bulletins from 2007 to 2020) and the National Institute of Statistics (Statistical Yearbook of Romania, editions 2007 - 2019, Monthly Statistical Bulletin from December, 2007 - 2020), Report on financial stability, 2020, NBR, Bucharest

The values of the relevant relative indicators that characterize the financial status of the population.

Indicator 1. Rate of financial savings of the population (Ref)

It highlights the degree of financial saving of the population, in other words, the degree of financial capitalization, the formation of the financial wealth of the population, being influenced by the evolution of population income, interest rates and dividends, and the development of the banking system.

The calculation formula is as follows:

$$\text{Re}\, f = \frac{ECF}{PIB} \times 100$$

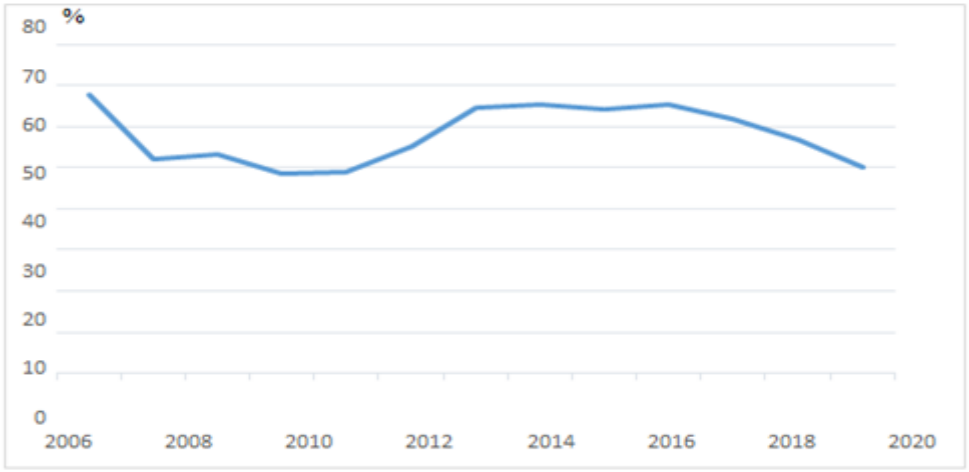
Determination of the indicator for the analyzed period:

Table 2. The evolution of the financial saving rate in the period 2007 - 2019

Indicator	Period												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
ECF s mil.lei	281719	268151	267400	258937	275787	329856	412876	436677	456547	499919	530414	534176	532039
PIB mil.lei	416007	514007	501139	533881	565097	595367	637456	668590	712588	765135	856727	940478	1059803
Ref %	67,72	52,17	53,36	48,50	48,80	55,40	64,77	65,31	64,07	65,34	61,91	56,79	50,20

Source: databases of the National Bank of Romania (from the National Financial Accounts 2007 - 2019 and the monthly bulletins from 2007 to 2020) and the National Institute of Statistics (Statistical Yearbook of Romania, editions 2007 - 2020, Monthly statistical bulletin from December, 2007 - 2019)

Figure 1. Evolution of the financial saving rate of the population in the period 2007 -



2019

Source: databases of the National Bank of Romania (from the National Financial Accounts 2007 - 2019 and the monthly bulletins from 2007 to 2020) and the National Institute of Statistics (Statistical Yearbook of Romania, editions 2007 - 2020, Monthly statistical bulletin from December, 2007 - 2019)

In the analyzed period there is a decreasing trend of the level of this indicator, at the end of 2019 it has a value by 6.60 pp lower than in 2018, being maintained a decreasing rate similar to that of 2018 compared to 2017, respectively by 5, 11 pp. It is obvious that the population's investments in financial securities were mainly determined by the revenues generated by the gradual development of the Bucharest Stock Exchange and by the impact of the financial crisis. The indicator can be divided into types of financial savings, and can be correlated with indicators specific to the financial situation of the population, calculated below.

Indicator 2: Population saving coefficient (Cie)

The calculation formula is as follows:

$$Cie = \frac{(\Delta ECF / ECF_b)}{(\Delta VBP / VBP_b)} \quad ,$$

Where:

b = previous, basic period

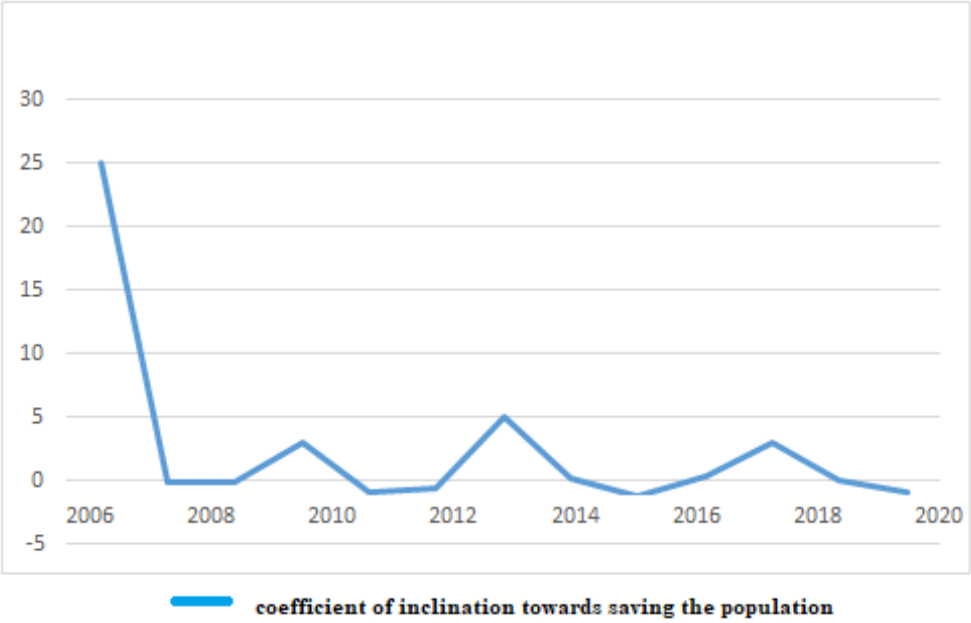
Determination of the indicator for the analyzed period:

Table 3.The evolution of the coefficient of inclination towards saving in the period 2007 - 2019

Indicator	Period												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
ECF mil.lei	281719	268151	267400	258937	275787	329856	412876	436677	456547	499919	530414	534176	532039
VBP mil.lei	200549	265161	279977	276993	255752	171336	180202	250692	239711	296852	310832	400611	458224
ΔECF	56149	-13568	-751	-8463	16850	54069	83020	23801	19870	43372	30495	3762	-2137
ΔVBP	1991	64612	14816	-2984	-21241	-84416	8866	70490	-10981	57141	13686	89604	57613
$\Delta ECF/ECF_b$	0,25	-0,05	0,00	-0,03	0,07	0,20	0,25	0,06	0,05	0,10	0,70	0,12	-0,56
$\Delta VBP/VBP_b$	0,01	0,32	0,06	-0,01	-0,08	-0,33	0,05	0,39	-0,04	0,24	0,23	6,55	0,64
Cie	25,00	-0,16	-0,05	3,00	-0,88	-0,61	5,00	0,15	-1,25	0,42	3,04	0,02	-0,88

Source: databases of the National Bank of Romania (from the National Financial Accounts 2007 - 2019 and the monthly bulletins from 2007 to 2020) and the National Institute of Statistics (Statistical Yearbook of Romania, editions 2007 - 2020, Monthly statistical bulletin from December, 2007 - 2019)

Figure 2. Evolution of the coefficient of inclination towards saving the population in the period 2007 – 2019



Source: databases of the National Bank of Romania (from the National Financial Accounts 2007 - 2019 and the monthly bulletins from 2007 to 2020) and the National Institute of Statistics (Statistical Yearbook of Romania, editions 2007 - 2020, Monthly statistical bulletin from December, 2007 - 2019)

The evolution of the level of this indicator highlights two phenomena: in certain periods (2008, 2009, 2011, 2012, 2015 and 2019) the coefficient of increase of the saving was exceeded by the coefficient of increase of the monetary incomes, because in other periods (2007, 2010, 2013, 2014, 2016, 2017, 2018) the financial saving to register an increase coefficient of saving much higher than that of money income.

Although there was a reduction in the increase of money income of the population in 2019 compared to 2018, respectively from 6.55 to 0.64, the coefficient of increase reduced from 0.32 to 0.22, in the period 2007 - 2018 , the saving of the population, reflected by the increase coefficient of saving, has decreased recently (reaching a negative

minimum of (-0.44) in 2019 compared to 2018), and the coefficient of propensity to save the population has decreased from 25.00 (in 2007 compared to 2006) reaching a negative minimum of (-0.88) for 2019 compared to 2018. At the same time, it will be found, through other indicators, that the degree of indebtedness of the population will increase.

Indicator 3: Coefficient of indebtedness of the population (Cip)

The calculation formula is as follows:

$$Cip = \frac{DTP}{POP}$$

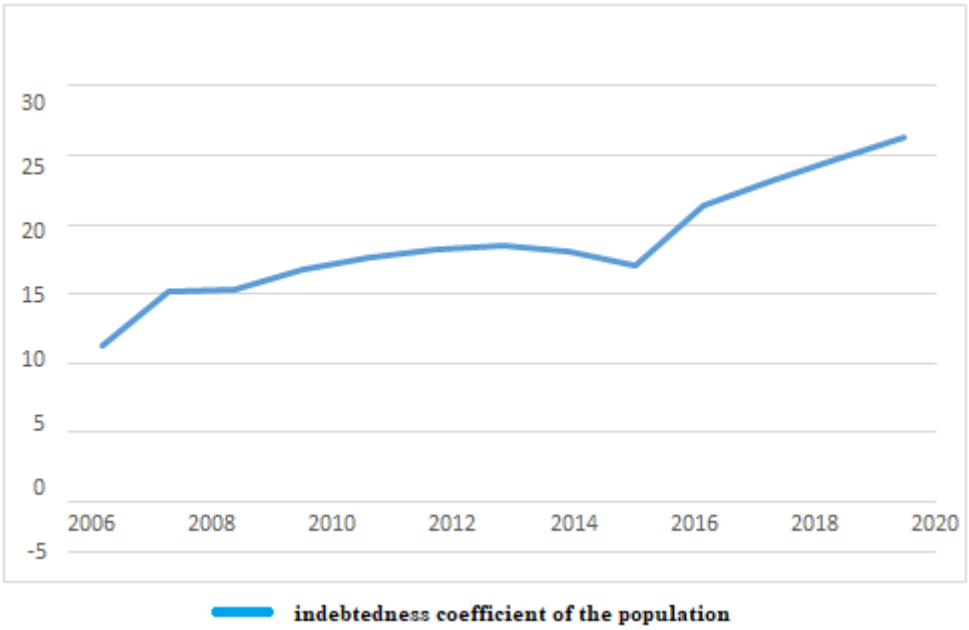
Determination of the indicator for the analyzed period.

Table 4. The evolution of the indebtedness coefficient in the period 2007 - 2019

Indicator	Period												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
DTP mil.lei	101479	137544	137835	151112	158433	163460	165072	161484	151870	189838	205594	219986	233185
POP mii loc	22562	22542	22516	22481	22434	22391	22346	22298	22242	22223	22215	22197	22175
Cip mii lei/loc	4,50	6,10	6,12	6,72	7,06	7,30	7,39	7,24	6,83	8,54	9,25	9,91	10,52

Source: databases of the National Bank of Romania (from the National Financial Accounts 2007 - 2019 and the monthly bulletins from 2007 to 2020) and the National Institute of Statistics (Statistical Yearbook of Romania, editions 2007 - 2020, Monthly statistical bulletin from December, 2007 - 2019)

Figure 3. The evolution of the indebtedness coefficient of the population in the period 2007 – 2019



Source: databases of the National Bank of Romania (from the National Financial Accounts 2007 - 2019 and the monthly bulletins from 2007 to 2020) and the National Institute of Statistics (Statistical Yearbook of Romania, editions 2007 - 2020, Monthly statistical bulletin from December, 2007 - 2019)

It is found that the indebtedness of the population, expressed per capita, increased significantly, but we must also take into account the effect of inflation, in nominal terms the degree of indebtedness increasing, during the analyzed period the evolution of the indebtedness coefficient increased to 10.52 pp, respectively with 0.91 pp in 2019 compared to 2018.

Obviously, the evolution of this indicator must be correlated with the evolution of interest rates, the purchasing power of the population, and other financial indicators of the population, the indicator highlighting the borrowing capacity of the population, but also the quality of the banking and financial system.

Personal conclusions and recommendations

The interpretation of the evolution of the indicators took into account the correlated and corresponding evolutions of the absolute values of the primary indicators, presenting the evolutions, on the same graph, of the relevant relative indicators, but also of the determining primary indicators. Moreover, the primary data identified were based on the databases of the National Bank of Romania (from the National Financial Accounts 2007 - 2019 and the monthly bulletins from 2007 to 2020) and the National Institute of Statistics (Statistical Yearbook of Romania, editions 2007 - 2019 , Monthly statistical bulletin from December, 2007 - 2020).

The analyzes so far of the financial indicators relevant to the households sector, allow to draw some generic conclusions regarding the characteristics highlighted by the population, from a financial point of view, in the analyzed period, namely:

Fluctuating evolutions of relevant financial indicators, often contrary to the financial dynamics of a market economy, mainly due to two factors: the strong intrusion of the political factor, accompanied by insecure and uncompetitive governance; the distortions and distortions that characterized the evolution of the financial system, of the banking system in full financial crisis, after 2009, and until 2018. For example, the evolution of the indicator Income Banking Rate (Rbv) highlights the evolution of the income of the degree of employment of the population in activities on the banking and financial markets, allowing to know the state and evolution of the financial behavior of the population, for the forecast and design of this indicator, as well as for the elaboration of monetary policies. The reduced financial potential of the population, compared to that of the countries recently entered the EU, but also compared to the needs of the development of the saving-investment cycle, primordial to the beneficial evolution of the economy. In this sense, the assertion of the population as the priority internal financier of the economy, often unique, highlights the shortage of investment opportunities specific to households, in an economy with financial resources that are rather unviable, authentic. Relevant indicators on assessing the financial status of the population are directly influenced by the evolution of nationally and European representative indicators, such as: the evolution of economic growth, the evolution of the active population in the economy and labor market, the evolution of public finances and the evolution of demographic change at national and European level.

The evolution of the primary indicators regarding the characterization of the financial status of the population in the period 2007 - 2019, especially for the active population, is directly influenced by the quality of employment of fit and employed adults. Furthermore, we appreciate that indicators such as the rate of financing the income of the population, the rate of financial saving of the population, net financial assets and the net financing capacity of the economy are directly influenced by employment in economic sectors and the evolution of the labor market. both at national and European level.

Decorations and dynamic deviations between the relevant financial indicators, derived from absolute financial indicators, which highlights the still turbulent state of financial flows and circuits in the economy. At the level of 2019, in the EU, we notice that Romania is, from the perspective of both components (assets and liabilities), at the "tail" of the ranking (according to Table no. 2.4.19). Financial assets relative to GDP increased in the EU, but in Romania, households have the lowest value of financial assets relative to GDP, only a third of the EU average in 2019. *Regarding the limitations of the research, we*

can appreciate that the relevant statistical data for 2020 are not yet available. Moreover, we intend to continue research with the same research topic.

We recommend deepening the existing indicators at national level, so that the orientation of the action directions at national level is in the direction of sustainable development at national level.

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E-LEARNING CHALLENGE – RISKS AND CHANGES

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Abstract: *During the COVID-19 crisis, countries world wide tried to implement rapidly, some measures to reduce the risks posed by changes in education. Thus, the speed of reaction and implementation of responses to change became crucial, without neglecting the limits and risks of resource. In this context, all countries are exploring ways to reopen schools and, in parallel, are designing new models of education that extend the boundaries of physical schools through technology. Although a large number of challenges have been faced by students and teachers in the case of online teaching and learning, the good news is that online courses are undoubtedly a laudable initiative, in the sense that it reduces as much as possible, the loss of teaching activities. In order to develop this new education, teachers and students should be encouraged to see everything as a challenge, to invest in their own training, to overcome some inconveniences and to implement in a proper way only what facilitates teaching, learning and assessment in the current conditions.*

Key words: *changes management, risk management, e- learning, Flipped Classroom.*
Classification JEL: *I21.*

1. Introduction

The 2019-2020 school year brought us some of the most difficult challenges and risks, but also opportunities to change our attitudes and adapt to the new, in the context of digitalizing education.

As in other countries, educational institutions in Romania were closed from March to June.

In order to ensure uninterrupted education for students, the Ministry of National Education encouraged teachers to organize online courses and, in addition, began to broadcast programs for students through national television.

Once that children returned in the classroom, respecting all the rules of hygiene and social distance imposed by the Coronavirus pandemic, schools are forced to reinvent themselves, lessons come to life in front of screens, and new methods make their way into learning.

These unprecedented days, online learning seems to be the only way to solve the academic crisis that is affecting the entire globe. And yet, *how does one move from the occasional use of computers to enhance face-to-face teaching and learning to the use of virtual environments for courses conducted entirely online according to a variety of educational models*?

In order to answer this question we must first establish what online learning represents and how its implementation has been achieved so far.

When one talks about online learning, we notice that the literature uses different terminology: e-learning, internet learning, distributed learning, network learning, TV-learning, virtual learning, computer-assisted learning, web-based learning and distance learning. All these terms imply that the student is not in the school environment, but is at a distance from the teacher, using a form of technology (most commonly a computer) to access the materials needed for learning, to interact with teachers and colleagues.

Thus, the literature offers various definitions of online learning, observing its evolution, with the expansion of this practice. Below (Chart 1) we make a brief review of the definition of the concept:

Chart 1. Defining the concept of online learning

1997	Khan, B.	online training is an innovative approach to deliver education to a distant audience using the Web as a medium
1999	Carliner, S.	online learning is an educational material that is presented on a computer
2000	Istrate, O.	e-learning is a type of distance education, as a planned teaching-learning experience organized by an institution that provides mediated materials in a sequential and logical order to be assimilated by students in their own way
2005	Guri-Rosenblit	e-learning is the use of e-learning media for a variety of learning purposes, ranging from additional functions in conventional classrooms to the complete replacement of face-to-face sessions with online sessions.
2006	Jereb and Šmitek,	e-learning refers to learning processes using computers to mediate learning and teaching activities of synchronous and asynchronous
2007	González-Videgaray	e-learning means learning based on information and communication technologies with pedagogical interaction between pupils and content, students and instructors or among students through the web
2009	Ellis, Ginns and Piggott	e-learning is defined as the information and communication technologies used to support students to improve their learning.

Source: prepared by the authors

However, online learning involves more than just the presentation and delivery of materials using the internet: the learner and the learning process should be the focus of online learning.

Thus, we believe that online learning could be defined as the use of computers as tools to access learning materials and to gain knowledge, but also to interact with teachers and colleagues in order to improve the learning experience.

2. Opportunities and threats in online learning

Increasingly, organizations are adopting online learning as the main method of employee training (Simmons, 2002). At the same time, educational institutions are mainly online due to the COVID-19 pandemic.

In this context, the actors involved in the educational process identified both benefits and opportunities, but also risks and threats brought by online learning.

We continue to try to summarize these aspects in the form of a SWOT analysis (Figure 1).

Figure 1. S.W.O.T. Analysis

Strenghts	Weaknesses
• There are no time zones, and location and distance are not an issue; • In asynchronous online learning, students can access materials online at any time, while synchronous online learning allows real-time interaction between students and teachers; • Students can use the Internet to access the most current and relevant materials in the field in which they study; • Online materials can be updated and students can see the changes in real time.	• Lack of technological devices or internet access for some of the participants in education (both students and teachers); • Students cannot be supervised by their parents throughout their online teaching activities; • The existence of a significant proportion of teachers who do not have the digital skills necessary to carry out quality online activities; • Lack of training courses in the field.
Oportunities	**Threatens**
• If properly designed, the e-learning system can be used to determine the needs and current level of students and to assign materials appropriately in order to achieve the desired results; • The information transmission environment is not the determining factor in the quality of learning, but rather the design of the course determines the efficiency of learning. (Rovai, 2002)	• Anxiety associated with the use of technology; • Being outside the comfort zone; • Perception of inequity in evaluation, especially in "group" tasks; • Inability (perceived) or difficulty in peer interaction, especially in presentations.

Source: prepared by the authors

3. Management of the risks generated by the online learning process

The 2020-2021 school year, marked by the global health crisis triggered by the emergence of the SARS-CoV-2 virus, forced us to witness a radical change that involves organizational, structural and functional changes, by rethinking the use of information technology, and implicitly, of the functioning of the organization, with an impact on the values and culture of the organizational entity.

In addition to the political, economic and social changes generated by the rapid spread of the effects of this ruthless virus, educational organizations face new risks that may affect decision-making, but also the effectiveness and efficiency of activities related to general and specific objectives.

Risks are situations or events that have not yet occurred but may occur in the future, in which case the achievement of pre-determined results is threatened or potentiated, so the risks may be either threats or opportunities and should be addressed as a combination. between probability and impact.

Starting from the produced effects, the risk is defined as a measure of the inconsistency between the different possible results, more or less favorable or unfavorable in a future action (Ceaușu, 2000). This approach also introduces the potential positive aspect of risk by adding the results of possible favorable activities.

In educational organizational entities, risk can be perceived as a planning tool, available to the manager, extremely useful in prioritizing the areas of interest of the institution and in establishing strategies and activities that reduce the negative impact on the general and operational objectives of the educational institution.

Given the implementation of the concept of risk in educational organizations, as part of the internal management control system, the accelerated development of information technology and the emergence of pandemic changes, which require the transfer of learning activities in the virtual environment, educational institutions, from at all levels, must fully carry out the stages of the risk management cycle, in order to provide reasonable assurance on increasing the likelihood of achieving the organization's objectives.

In a general approach, risk management involves the identification, analysis and ongoing assessment of risks that may arise during the course of activities, as well as the planning of effective actions to be carried out in risk situations. (Andersen and Schroder, 2010).

Risk management, according to national legislation, is a complex process of identifying, analyzing and responding to possible risks of a public entity, through a scientific approach, which uses material, financial, human and information resources to achieve objectives, aimed at reducing exposure to losses.

If we refer to information systems, which today are an ideal tool for teaching-learning-assessment activities, risk management can be defined as the whole of the efforts of the relevant ministry, school inspectorates and educational institutions to combat threats, vulnerabilities and consequences due to unprotected data, information and knowledge.

At the same time, given the low experience of managers of educational institutions and teachers, in terms of risk management generated by online learning activities, it is necessary to address only the process of identifying risks.

Given the concepts presented, risks identified in the virtual environment can be considered: violation of the confidentiality and integrity of the personal data of children, parents and teachers.

4. Flipped Classroom Method

This is the first time in Romania when online education has been widely introduced, and, in terms of the teaching-learning-assessment process, the pros and cons have already been reported, both by the teachers involved and of students and parents.

Thus, in order to adapt to the changes brought about by the implementation of e-learning, teachers have to reorganize their teaching method by adopting new techniques and strategies. Among them, the Flipped Classroom method stands out, an unconventional learning method, in which the roles of the participants in the instructive-educational process are partially reversed.

However, although the idea of the overthrown class has gained more and more ground lately, however, specialists have not formulated a uniform definition for this concept.

Thus, according to the author Ash K., the term flipping comes from the idea of taking the teacher's instructions during the formal class time (synchronous meetings) and moving them home (asynchronous meetings), so that the class time is used for students to engage active in practice and skills building (Ash, 2012).

In the original version, the method involved the use of lecture videos outside of class, thus providing more time in the virtual classroom to involve students in active learning. However, it seems that the traditional (synchronous) mode of instruction remains unchanged, except that the time spent in class conferences is done at home.

Presenting advantages and disadvantages, the original version of the Flipped Classroom method found supporters and contestants. We still mention two opinions (Chart 2), of the authors Neilsen and Millard.

Chart 2. Flipped Classroom Method Advantages and disadvantages

Five reasons to carefully implement the *Flipped Classroom* **(Neilsen, 2012):**	**Five reasons why the** *Flipped Classroom* **works (Millard, 2012)**
Lack of technology at home	Increases students engagement
Increases the number of homework for students, taking up their free time	Strengthens team-based skills
There is the possibility of repeating the same materials, both in asynchronous and in synchronous meetings.	Provides personalized guidance to students
Teamwork leads to the creation of inequities	Focuses the discussion in class
It is built on a traditional model of teaching and learning	It gives more freedom to schools for more efficient organization of synchronous working time

Source: prepared by the authors

In the version adapted to the current context, the specialists borrowed the basic idea of the method, but developed four new pillars, based on which teachers can build their lessons reversed in the online environment. The four pillars are:

- **F** - *Flexible environment*: the adoption of various learning modes specific to the virtual environment. Students choose when and where to learn.
- **L** - *Learning culture*: the student-centered approach, in order to actively involve them in the construction of knowledge.
- **I** - *Intentional content*: efficient selection of content, methods and strategies so that time spent synchronously is used to the maximum, depending on the level of the class and the subject matter.
- **P** - *Professional educator*: reflecting on one's own practices, adopting less prominent roles, constantly improving training, accepting constructive criticism.

This approach can lead to the creation of dynamic online activities, in which students do not get bored, while acquiring work skills in the online environment and training the skills needed to acquire knowledge specific to age and cognitive development.

5. Conclusions

In order to ensure the continuity of students' learning, even in conditions of suspension of activities physically carried out in educational institutions, some governments are looking to find a solution in online education initiatives.

Such initiatives are also found in the Romanian education system, and include: the use of synchronous online communication and the design, delivery and asynchronous online evaluation of learning activities within a virtual platform.

For many researchers and practitioners in the field of online education, the health crisis caused by the New Coronavirus is considered an opportunity to support both students and institutions, by filling the gap left by the conventional (face-to-face activities).

Indeed, online education has a number of advantages, primarily that it allows teachers and students to continue to teach and learn from any location without interruption.

However, let us not forget that these "emergency" online education initiatives are generally untested and, in some cases, are not constantly applied in all educational institutions. In addition, e-learning initiatives can be implemented with less risk only if students (and teachers) have reliable access to the technology and resources needed to conduct online activities.

Governments and decision-makers have tried, in a short time, to create a legal framework for the implementation of online education, to transmit the necessary methodologies and the desired results of the practice.

Risk management provides educational organizational entities with a wide and varied range of ideas, concepts, techniques and tools for collecting and analyzing information, data and knowledge about potential adverse events and developing strategy to respond to these challenges specific to the educational organizational environment.

National experts in the field of education strive to find a good way forward by validating common goals and objectives, but leaving each institution flexible in how to implement online learning.

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TRADITIONAL BANKING AND FINTECH DISRUPTION. PROJECTIONS, DYNAMICS, COMPETITION AND EFFICIENCY

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Abstract: *In recent years, financial innovation has accelerated greatly, new financial services have radically changed the banking environment. The main factors contributing to the dynamism of fintech are the development of IT and mobile communications infrastructure, pioneering financial services offered by new technology companies and the design of new financial services based on consumer needs. The fintech areas are: credit, deposits and capital raising services; payment, clearing and settlement services, including alternative currencies; financial investment and insurance services. However, in the near future many of the new financial services will not pose too much of a problem for banks. For example, P2P loans will reduce the market share of banks, but in no case will they eliminate bank loans because, on the one hand, the clientele that will go to the market for P2P loans will be the risky one, unapproved by banks. and on the other hand, because credit institutions still have the majority of resources and the majority of customers. Another example is payments, which continue to be carried out mainly by banks because alternative systems do not yet have a global infrastructure, and the completion of payments presupposes the existence of the legal tender issued only by central banks.*

Keywords: *fintech, banking, P2P loans, crowdfunding, alternative currencies.*
JEL Classification: *G21.*

1. Strategies for the bank of the future. The new fintech operators

1.1. Modernization and digitization of existing banks

In this scenario, existing banks are digitized and modernized to maintain the relationship with customers and basic banking services, using new technologies that allow them to change their traditional business models. Existing banks are generally under pressure to improve both the efficiency of operations and the relationship with customers. Due to their knowledge and greater investment capacity, today's banks have a great capacity to obtain new services and products by adopting new technologies or improving existing ones. Technologies such as cloud computing, big data, AI and DLT can be adopted or considered as a means of improving the current products, services and operations of banks.

Banks need to adopt new technologies to develop new service proposals that cannot be effectively provided with their current infrastructure. New technologies and processes used by non-banking innovators can also be employed by existing banks:

• New technologies such as biometrics, video imaging, chatbots or AI can help banks create sophisticated capabilities to maintain a long-distance relationship with customers, ensuring secure transactions and mitigating fraud and risk.

• Many innovations take into account secure customer identification solutions.

• Innovative payment services. Most banks have developed branded mobile payment services or payment services provided by third parties that integrate with the old platforms operated by the bank and thus, customers consider that their bank can offer a more secure mobile payment service than non-banking alternatives.

• Banks can offer robotic counselling services, digital wealth management tools, etc., with the intention of maintaining a competitive position in the retail banking market, retaining customers and attracting new ones.

• The digitization of loan processes is becoming increasingly important to meeting the requirements of the consumer in terms of speed, convenience and cost of credit. Digitization requires more efficient interfaces, integrated processing tools with older systems, document management systems, and sophisticated customer identification and fraud prevention tools. These can be achieved by a existing bank by developing its own

loan platform, purchasing an existing one or outsourcing these services to third party service providers. This scenario assumes that current lending platforms will remain niche players.

Although there are signs that traditional banks have made new investments in digitalization and modernization, it remains to be seen to what extent this scenario will be dominant.

1.2. Distributed banking

In the scenario of distributed banking, the provision of financial services is fragmented between fintech companies and existing banks, financial services can be provided by traditional banking operators or other financial service providers, whether fintech or bigtech, which can "connect" with customers both on its own digital interface or on any platform owned by any of the players in the market. A large number of new companies are appearing to offer specialized services without trying to be banks, focusing rather on providing specific (niche) services. These companies choose not to claim ownership of the customer relationship, while banks and other financial players compete to fully own the customer relationship, as well as to provide basic banking services. In the distributed banking scenario, fintech banks and companies operate through associations, partnerships or other structures in which the delivery of services is shared between the parties. In order to further retain the customer, whose expectations in terms of transparency and quality have increased, banks may choose to offer products and services from third-party suppliers. On the other hand, consumers can use several financial service providers instead of remaining at the disposal of a single financial partner.

Proof that this strategy is the one that will be used in the near future is the growing penetration of the API banking market. But there is other evidence:

• Loan platforms become partners of banks and assign to the latter the marketing of credit products, as well as the approval process, financing and compliance management.

• Innovative payment services appear with partnerships between banks and fintech companies.

• Automatic counselling services (robo-advisor) are provided by fintech companies through a bank or as part of a joint venture with a bank.

1.3. The relegated bank

Another scenario is that the traditional bank is downgraded to a lower category, that of a simple service provider, customer relations being owned by new intermediaries: fintech and bigtech companies

Fintech and bigtech companies use front-end platforms (the part of a computer system or application with which the user interacts directly) to provide customers with a variety of financial services from a diverse group of providers. They use existing banks because they hold licenses to provide basic banking services, loans, deposits, etc. The bank downgraded to a simple provider of services performed by others may keep the risk of these activities in its own balance sheet or assign it to fintech, depending on the contractual relationship with the latter.

In the relegated banking scenario, big data, cloud computing and AI are fully exploited on various front-end platform configurations, which innovatively and extensively use connectivity and data to enhance customer experience. Operators of such platforms have more opportunities to compete directly with banks for customer relationship ownership. For example, many data aggregators allow customers to manage accounts opened with multiple financial institutions on a single platform and thus, the consumer

position becomes much more comfortable than if they were to manage all those accounts on their proprietary platforms.

Although the downgraded banking scenario may seem unlikely, a number of examples from the current financial services industry show us how banks are downgraded to provide services created by other players who have a customer relationship:

• Growing non-bank payment platforms on which banks offer only assistance and back office operations, fintech companies being those that directly engage the relationship with the customer and manage the product. In fact, the bank, which holds the license for transactions with the customer, does nothing but authenticate the customer so that they can access funds from cards or bank accounts.

• Online lending platforms expand their range of services by becoming in fact an intermediary between customers (creditors), on the one hand, and banks, on the other hand, who only become providers of funds for these platforms and keep the account of the credited customer in which they receive the loan, plus any other adjacent services.

• The bank is the one that holds the funds of the client who appeals to the robo-advisor that directs their investments.

• Social networks focus on customer relationships and exploit customer data, while third parties, such as banks, are downgraded into product and risk management (e.g., China's WeChat instant messaging app uses customer data to provide its customers with personalized financial products and services from third parties, including banks, and the Tencent Group has launched WeBank, a licensed banking platform linked to the WeChat messaging application, to provide products and services to third parties).

1.4. The disintermediated bank

In this scenario, probably the darkest, the traditional bank loses its main function, that of intermediary, it becomes a disintermediated bank. In other words, banks become irrelevant because customers interact directly with individual financial service providers.

Existing banks are no longer a significant player in the disintermediated banking scenario, as the need for intermediation or a trusted third party is eliminated. Banks are eliminated as part of customers' financial transactions by more dynamic platforms and technologies, which provide services to end consumers according to their financial needs (loans, making a payment, raising capital, etc.).

In this scenario, customers directly choose both the service or services they need and their provider or providers. Customers no longer choose a single provider from which to contract a package of services, as happens in the example of the traditional bank. But this spread of financial services to a large number of providers may be accompanied by an increase in customer liability and, at the same time, the risks it bears (for example, the risk of bankruptcy does not come from one side, the bank where he keeps his account and provides him with a series of financial products, but in N parts, from the N financial service providers, as well as the probability of theft or loss of cash in the account).

1.5. The new bank: challenger banks and non-banks

In the future, according to another scenario, traditional banks will not be able to survive the wave of technological disruptions and will be replaced by new technology-based banks, such as neo-banks or banks set up by large technology companies that provide comprehensive financial services, through digital platforms. New banks are using advanced technologies to provide banking services in a more cost-effective and innovative way. New players can obtain banking licenses under existing regulatory regimes and have a relationship with customers or they can have traditional banking partners.

New banks are looking for a foothold in the traditional banking sector, but are using a modernized and digitized business model, moving away from the branch-centred customer relationship model. New banks no longer use old infrastructure, but capitalize on new technology at a lower cost.

Many of these new banks are called challenger banks. They are small banks, open to the retail public and competing directly with senior banks. Their origin is in the UK, where the new challenger banks entered the market, specializing in areas served by some of the large traditional banks or in some cases the new banks were created by large banking groups: TSB Bank from Lloyds Banking Group or they arose through the liquidation of a large bankrupt bank, as was the case with Virgin Money of Northern Rock.

Challenger banks differ from traditional banks through modern practices based on new financial technology, they have exclusively online operations, which avoids high costs, but also the complexities of traditional banking operations. But in order to be a "bank", the new company must be authorized to accept retail deposits by the financial regulator.

Neo-banks (BCBS, 2018) make extensive use of technology to provide banking services to the population and mainly through a smartphone application and an internet-based platform. This allows neo-banks to provide banking services at a lower cost compared to traditional banks. Neo-banks target individuals, entrepreneurs and small and medium-sized enterprises. They offer a wide range of services from checking accounts and overdrafts to deposit accounts, credit cards, financial advice and loans. They use scalable infrastructure through i-cloud providers or API-based systems to better interact through online, mobile and social platforms.

Their profitability is mainly based on: (a) commissions and, to a lesser extent, interest income, (b) lower operating costs and (c) a different approach to the marketing of their products, as neo-banks can use large data-based technologies and advanced data analysis.

Although it is estimated that neo-banks have high costs for attracting customers, they can be flattened through pricing strategies.

1.6. Bigtech

Bigtech (BCBS, 2018) refers to large digital technology companies active globally. Bigtech companies typically provide web services (search engines, social media, e-commerce, etc.) to end users on the Internet and/or IT platforms or maintain the infrastructure (data storage and processing capabilities) through which other companies can provide products or services. .

Like fintech companies, bigtech companies have highly automated operations and a dynamic software development process, tailored to user needs. Bigtech companies have global operations and a large customer base. They can use a large amount of information about their clients to provide them with financial services tailored to their individual needs. Thus, bigtech firms have a considerable competitive advantage over their competitors, for example, existing banks, in providing financial services.

These companies can quickly gain significant global market share when they launch a new financial product or service. Given the size of their operations and their investment capabilities, bigtech can quickly influence markets. Many banks, financial institutions and fintech companies collaborate with bigtech companies, which then become relevant third-party suppliers in the financial system.

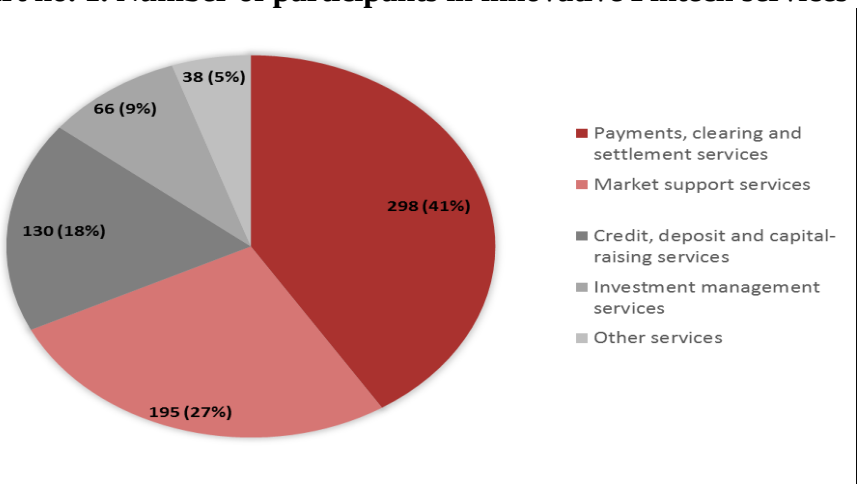
Examples of bigtech companies in the Western world are Google, Amazon, Facebook and Apple, collectively known as GAFA. Similarly, BAT refers to three of China's largest technology companies, namely Baidu, Alibaba and Tencent. In addition,

traditional companies such as Microsoft and IBM are also technology companies relevant to the financial system and can be included in any bigtech analysis.

2. Dynamics on the fintech services market

The Basel Committee on Banking Supervision (BCBS, 2018) conducted an informal survey among its members, asking them to identify significant fintech products and services in the countries they represent.

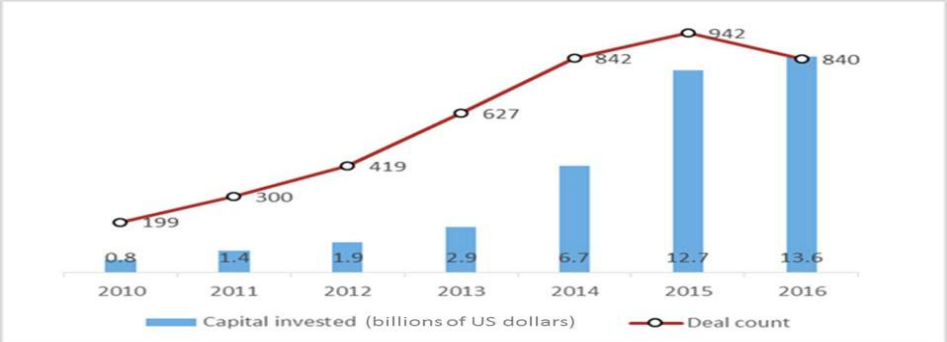
Chart no. 1. Number of participants in innovative Fintech services



Source: KPMG International, 2016

Respondents reported that the largest number of fintech service providers are in the category of payments, clearing and settlement, representing more than two-fifths, followed by credit services, deposits and capital raising, with less than one-fifth, the others categories (investment services, insurance, etc.) hold less than one-sixth. In the category of payments, clearing and settlement, retailers (which offer services to the end consumer) represented the majority of identified fintech firms, compared to payment service providers for enterprises, which have a much lower share. Second, size ranges support services, i.e. companies offering financial services to support re FinTech and representing, according to survey participants, close to 30% of all innovative enterprises.

Chart no. 2. Investment venture capital funds in Fintech companies

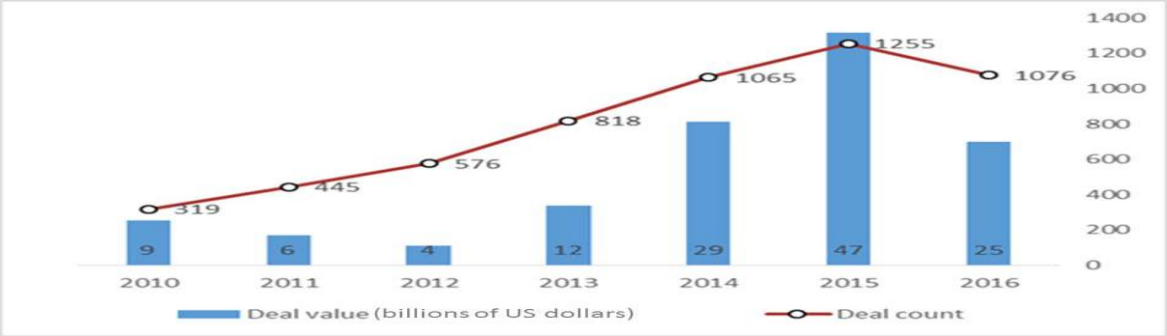


Source: KPMG International, 2016

It is difficult to quantify the size and growth of fintech and its potential impact on the banking industry, as statistical data are lacking. Opinions about the evolution of the field are based on indirect statistical data. For example, information about the dynamics of the sector may result from investments made by venture capital funds in fintech

companies. Thus, a KPMG report (2016) shows that in 2016 global investments in fintech companies reached $13.6 billion, with 840 transactions (chart 2), noting that the real figure is much higher, because direct investments by venture capital funds are also made in many fintech companies, but also by financial institutions, banks and other institutional investors (chart 3).

Chart no. 3. Total investments in fintech companies



Source: KPMG International, 2016

Although the capital invested in Fintech companies continued to grow, the 2016 decline in volume and number of transactions led some to speculate that enthusiasm for fintech technology has peaked. In addition, it should be noted that volumes are still small in relation to the size of the global financial services sector.

3. Competition between banks and fintech

To see if new technologies are competitors for traditional banking, we need to start by analysing the similarities and differences between traditional finance, brokered by banks or other firms and fintech.

P2P loans. Let's start with the difference between bank loans and P2P loans. There is an opinion that a P2P lender is nothing more than a computer program that offers an investor-borrower association algorithm, so it is not a firm that maximizes its profit and for this reason it cannot be compared to a bank. But P2P lenders are also entities that maximize their profit and have opaque decisions that can erode users' trust.

If in its beginnings, P2P loans were indeed "peer-to-peer", now most investors are hedge funds and large financial institutions.

Banks have access to interest-bearing deposits and invest their own capital in loans. So they are "leveraged lenders." P2P platforms have no deposits and are full-fledged creditors. Because of this they need enough equity, so in their case there is a moral hazard. But this means that banks face higher operating cost than P2P platforms, due to the way of attracting resources and the regulation of their.

P2P loans will certainly reduce the market share of banks, but in no case will they eliminate the market for bank loans: On the one hand, the clientele that will go to the market for P2P loans will be the risky one, which is still not approved by banks and which is still addressed to non-bank intermediaries. On the other hand, the main reason why banks will remain the main lender, at least in the near future, is that they still have the majority of resources as well as the majority of customers, and the current figures cannot disappear overnight. The new P2P lending market is little known, only a minority use it and, more importantly, it is not associated with trust and collateral, qualities traditionally attributed to banks. In addition, it is very possible that banks will create their own P2P lending networks (or purchase or partner with P2P lending platforms) as a continuation of the process of disintermediation and withdrawal from risk-taking that banks began a few

decades ago (see vehicles through which banks outsourced their loan portfolios), but also as a result of legislation that almost forces banks to open their systems to fintech operators (see European directive PSD2).

Payment, clearing and settlement systems. Payments made through new payment processors are gaining ground, but most of them continue to be made through banks, because alternative systems do not yet have a global infrastructure, and the completion of payments requires the existence of legal tender issued only by central banks. Likewise, issuers of cryptocurrencies or tokens are on the rise, and holdings of such assets are increasing, but they also remain marginal, their functions being rather financial assets and still not having the utilities traditionally attached to the currency: they lack the standard role, due very high volatility, the means of payment function is limited, the volume of transactions being relatively small, being less accepted for payments, and their share as a saving tool is marginal. In addition, many central banks have initiated projects to issue digital currencies, which will in the future be a substitute for legal cash.

4. FinTech and operational efficiency

The use of new technologies has important implications for participants in the financial services market, materialized, on the one hand, in lower costs for loans, payments, financial advice and insurance, and on the other hand in better products for consumers (VIVES, 2020). Fintech creates efficiency in several ways:

1. It can more effectively select credit applicants through statistical models based on big data, thus overcoming the information asymmetries that underlie traditional lending banking. The important thing is that a lot of information can replace the guarantees behind the loans, and therefore fintech-based entities may be able to lend to businesses and households without asking for collateral. Moreover, fintech entities may be able to approve loans immediately because they process mortgage applications faster than other lenders.

2. Reduces the need for staff (e.g. loan officers and cashiers) and an extensive branch network (as customers use their personal computers and, more and more often, mobile phones for banking).

3. Allows for a more accurate determination of interest rates on loans because by manipulating and capitalizing on the information at their disposal they can estimate costs and risks with very high accuracy. For example, fintech lenders use interest rate models for higher-performing mortgages compared to those used by traditional banking institutions, estimating risk more easily and thus being able to set interest rates more accurately for borrowers (they may charge higher interest rates for low-risk borrowers, who are more likely to be less price sensitive and more time sensitive).

4. Can increase financial inclusion by opening up financial services, in less developed countries, to non-banked segments of the population and small and medium-sized enterprises (SMEs) that are not served or insufficiently served by banks.

5. Uses new technologies that allow for innovation, to create new banking products and services, much more compared to traditional banks.

5. FinTech in Romania

In the middle of 2019, it was estimated that in the last 10 years, 49 fintech companies were launched in Romania, which attracted a total local funding of 8 million € (Voinea, 2019). Most of this funding, almost 50%, went to fintech companies in the insurance area, while 23% of funding from 2008-2018 went to fintech companies to support SMEs, 20% to corporate banking, and the retail banking segment obtaining only 10%.

Of the 49 fintech companies active in Romania, 18 cover the retail banking area, 9 are technology, 8 banking for SMEs, 6 support services, 3 in insurance and 3 in corporate banking.

Among the fintech companies considered promising, are listed: Argentum, Confidas, Fintech OS, Instant Factoring, Minutizer, SymphoPay, ThinkOut, Smart Bill, Orange Money. But the services of other international fintech companies are also used in Romania, such as: Revolut, Monese, TransferWise, N26, Monzo and PayPal. Among the investors in fintech in Romania are mentioned venture capital funds: Gapminder, Early Game Ventures, Gecad Ventures etc. or accelerators: Techcelerator, Spherik Accelerator, Innovation Labs, Risky Business, etc., but also business angels, such as techangels.ro.

In terms of challenges, barriers to fintech in Romania are represented by: lack of trust, Romanians being reluctant when it comes to 100% digital financial services, low level of financial education and lack of regulatory framework for fintech activities. The same source mentions that the profile of the fintech client in Romania is represented by "people who make online transactions, from shopping to transport payment (Uber, Bolt) or consumer services, for active people, always updated and connected to new information, to technology. These are younger people, who grew with such technologies."

6. Conclusions

What will the financial world look like in the future? Some bet on modernizing and digitizing existing banks. Others consider that a plausible scenario is that of distributed banking, in which the provision of financial services is fragmented between fintech companies and existing banks, financial services can be provided by traditional operators (banks, etc.) or other financial service providers, whether they are fintech or bigtech, which can "connect" with customers either on its own digital interface or on any platform owned by any of the players on the market. Another scenario is that the traditional bank is downgraded to a lower category, that of a simple service provider, customer relations will be owned by new intermediaries: fintech and bigtech companies. The disintermediated bank is the darkest scenario, in which the traditional bank loses its main function as an intermediary. The traditional bank becomes a disintermediated bank. In other words, banks become irrelevant because customers interact directly with individual financial service providers. In the future, according to another scenario, traditional banks will not be able to survive the wave of technological disruptions and will be replaced by new technology-based banks, such as neo-banks or banks formed by large technology companies, which provide full-service built on digital platforms or **challenger banks**. New banks are using advanced technology to provide banking services in a more cost-effective and innovative way. New players can obtain banking licenses under existing regulatory regimes and can have a relationship with customers or may have traditional banking partners. But, we must not forget Bigtech, which refers to big, globally active digital technology companies. Bigtech companies typically provide web services (search engines, social networking, e-commerce, etc.) to end users on the Internet and/or IT platforms or maintain the infrastructure (data storage and processing capabilities) that other companies can provide products or services.

To see if new technologies are competitors for traditional banking, we need to start by analysing the similarities and differences between traditional finance brokered by banks or other firms and fintech. P2P loans will certainly reduce the market share of banks, but in no case will they eliminate the market for bank loans: On the one hand, the clientele aiming for the P2P lending market will be a risky one, which is not currently approved by banks and is still addressed by non-bank intermediaries. On the other hand, the main reason why banks will remain the main lender, at least in the near future, is that they still

have the majority of resources and customers, and the current figures cannot disappear overnight. Payments made through new payment processors are gaining ground, but most of them continue to be made through banks, because alternative systems do not yet have a global infrastructure, and the completion of payments requires the existence of legal tender issued only by central banks.

Fintech come on the market with extra efficiency and efficiency. Thus, credit applicants can be selected more efficiently through statistical models based on big data, thus overcoming the information asymmetries that underlie banking. Importantly, a lot of information can replace collateral behind loans, and therefore fintech-based entities may be able to lend to businesses and households without asking for collateral, and mortgage loan processing times are faster. Another advantage is that fintech reduces the need for staff (loan officers and cashiers) and an extensive branch network (customers use their personal computers and mobile phones for banking). Fintech technologies allow for a more accurate determination of interest rates on loans with a much more targeted price, because they make better use of the information they have to estimate the risks with very high accuracy. fintech can increase financial inclusion by opening up financial services, in less developed countries, to non-banked segments of the population and small and medium-sized enterprises (SMEs) that are not served or under-served by banks. Fintech companies use new technologies that allow them to innovate, create new banking products and services.

In the middle of 2019, it was estimated that in the last 10 years, 49 fintech companies were launched in Romania, which attracted a total local funding of 8 million €. Of the 49 fintech companies active in Romania, 18 cover the retail banking area, 9 are technology, 8 banking for SMEs, 6 support services, 3 in insurance and 3 in corporate banking. In terms of challenges, barriers to fintech in Romania are represented by: lack of trust, Romanians being reluctant when it comes to 100% digital financial services, low level of financial education and lack of regulatory framework for fintech activities.

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TAXATION, GLOBALIZATION AND TECHNOLOGICAL-INDUSTRIAL REVOLUTION - EFFECTS ON COMPANIES

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Abstract: *The paper aims to highlight the main fiscal changes in companies due to globalization and the technological revolution (digitalization), as well as the influence on the environment in which companies operate, respectively the obstacles / barriers and fiscal facilities necessary to continue their activity in a favorable economic environment. In this sense, we took into account the evolution of the implicit tax rate at the level of the European Union, in the period 2006-2018 (we used this type of rate because it captures the best the tax changes in the analyzed period), the methodology used being a descriptive one, by appealing to various bibliographic sources, mainly from foreign specialty literature.*

Keywords*: firms, implicit tax rate, market entry/ exit barriers, tax facilities, EU.*
Jel Classification*: F61, F62.*

1. Introduction

Globalization means, first of all, the opening of markets in the states of the world, namely the free movement of economic capital, but also the establishment of rules that facilitate trade between various countries and regions. However, although statistics show that the economy, companies and people (in part) benefited from the effects of globalization, these benefits are not automatic, nor are distributed equally among European regions and between citizens.

The positive effects of globalization on the economy as a whole (increasing jobs, quality of life, attracting foreign investment and thus improving the performance of companies, especially large ones) are well known, but also the negative ones, which affect categories of actors participating in economic life (by increasing inequalities, in the case of individuals, or, for companies, transferring profits / moving activity to areas with tax-friendly legislation, wealthy households can move their assets to tax havens).

Therefore, new business models should encourage entrepreneurial spirit, while ensuring fair competition conditions and the regulatory environment should be simple and favorable for entrepreneurs (especially SMEs).

Our objectives are to identify the tax effects of globalization and the technological revolution on companies, and in this context we use the implicit tax rate at EU level (which reflects the best the fiscal changes in the period analyzed), as well as measures to eliminate barriers in order the companies to continue their economic activity and to develop in a friendly economic environment.

2. Aspects regarding globalization and companies`s taxation. The Implicit tax rate (ITR)

Corporate income tax influences both the firms location and domestic and foreign direct investment. Tax rates, the way in which the tax base is defined and the issues related to tax compliance are determinants of the economic effects of taxation. The tax treatment of various sources of financing, the development of tax incentives and the time allocated by companies to tax compliance can influence productive investments. Profit tax differences can cause multinational companies to shift profits from high to low-taxation countries.

Effective tax rates reflect a wide range of factors that are not limited to corporate income tax, such as the elements of the tax base, the source of financing (debt, reported result or equity increase) and the asset in which investments are made (machinery,

buildings, intangible assets, stocks and financial assets). There are important differences between the average effective corporate income tax rates, which range from 38,4% in France to 9% in Bulgaria.

The decision to increase or reduce investment is influenced by the effective marginal tax rate. The lower the effective marginal tax rate, the more investment-friendly the tax regime is. There are several ways to reduce the marginal effective tax rate and to design a tax system favorable to investment. These include: acceleration of fiscal amortization schedules or immediate accounting as expenses; offering the possibility to deduct capital costs; improving the conditions for carrying forward losses; granting fiscal incentives for research and development.

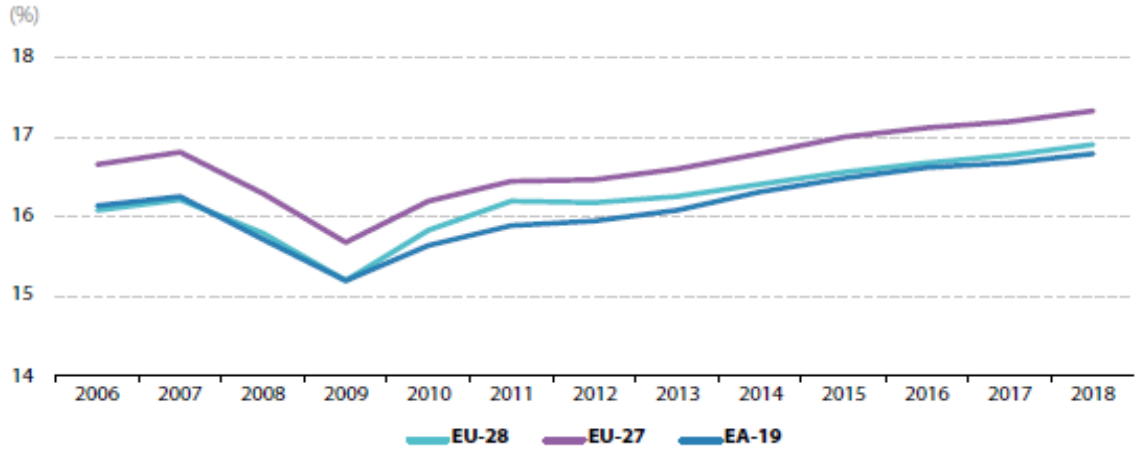
We will further analyze how globalization has affected taxation at European level, more precisely we highlight the level of implicit tax rates (ITR) on consumption, corporate income and employment in European countries, in the period 2006-2018 (data used in the Taxation Trends 2020 Report, European Commission).

We refer to the implicit tax rate, as it highlights the best the changes in the tax burden during that period. The companies statutory tax rates on capital or income "come" directly from the Fiscal Code, but do not take into account the taxable base. Effective marginal and average tax rates also use data from the Fiscal Code. They measure the tax burden on a hypothetical investment project based on real tax legislation.

There are big differences between tax rates across the EU. The implicit tax ratemeasures the average effective tax rate and thus incorporates the effects of tax rates and the width of the tax base, including various exemptions.

The differences between consumption tax rates, labor tax rates and corporate income tax rates are significant. In 2018, the implicit consumption tax rates ranged from 14% in Spain to 26% in Hungary, labor taxes (including social security contributions paid by both employer and employee) ranged from 25% in Bulgaria to 44% in Slovakia and the implicit corporate tax rate is less or equal to 10% in Cyprus, Luxembourg, Hungary, Netherlands and Ireland, while in France it exceeds 35%.

Figure no. 1. Implicit tax rate on consumption (%), 2006 -2018



Source: European Commission, 2020. *Taxation Trends in the European Union*. [online] Available at: <https://ec.europa.eu/taxation_customs/taxation-trends-european-union_en> [Accessed 1 February 2021].

ITR on consumption in EU-27 have recorded an upward trend since 2009, reaching 17,3% in 2018; it have risen in 20 Member States and fallen in seven more, and remained constant in the other states. The biggest increases were in Hungary, Cyprus and Latvia, and the largest decrease was in Ireland. Therefore, at EU level, fiscal measures taken during

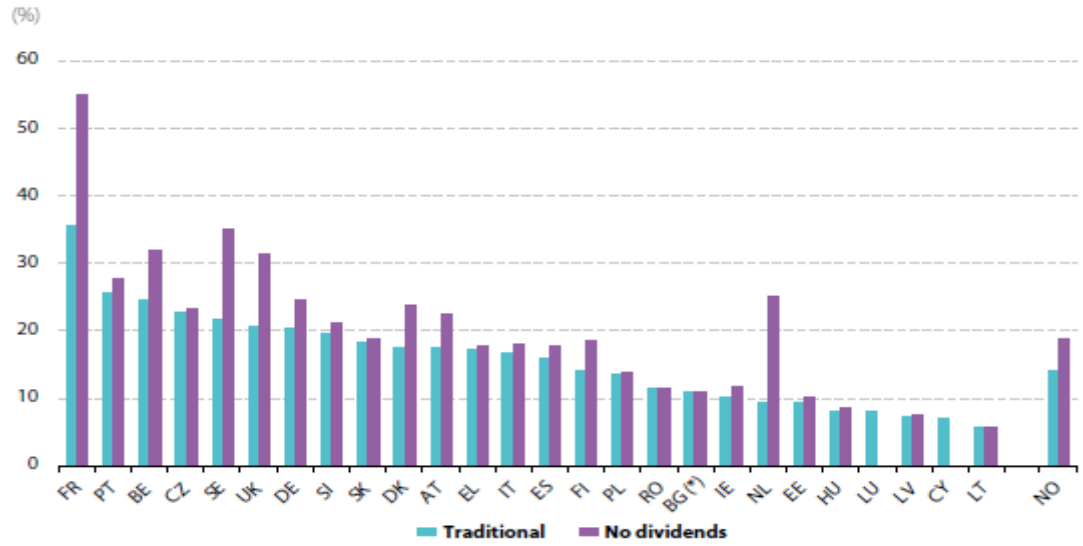
this period have encouraged consumption, and globalization has been a factor in encouraging this. According to statistics, consumption ITRs have relatively low values, but there is a difference between the developed and the developing countries.

Implicit tax rate on companies` income/ profit is defined as the income tax revenues / corporate profits (including holding gains) and all corporate taxable capital and business income. The numerator includes taxes on the company's income, and the denominator is defined as the sum of the net operating surplus and the balance of income in the sector.

A complete definition and description of the methodology can be found in Annex B to the European Commission (Taxation Trends 2020). This indicator is called the "traditional" version by the European Commission. There is a "no dividend" alternative version, which excludes all dividends from the denominator, due to the widespread tax exemption for dividends received.

The figure below shows the differences between the two versions of the ITR on company revenues in 2018; the figure establishes a clear division between Member States in terms of the extent of the differences observed between the two indicators. These differences are significantly larger (more than 10 pp) in two Member States: France and the Netherlands.

Figure no. 2. Implicit tax rate on corporate income differences (traditional version versus non-dividend version), 2018



Source: European Commission, 2020. *Taxation Trends in the European Union*. [online] Available at: <https://ec.europa.eu/taxation_customs/taxation-trends-european-union_en> [Accessed 1 February 2021].

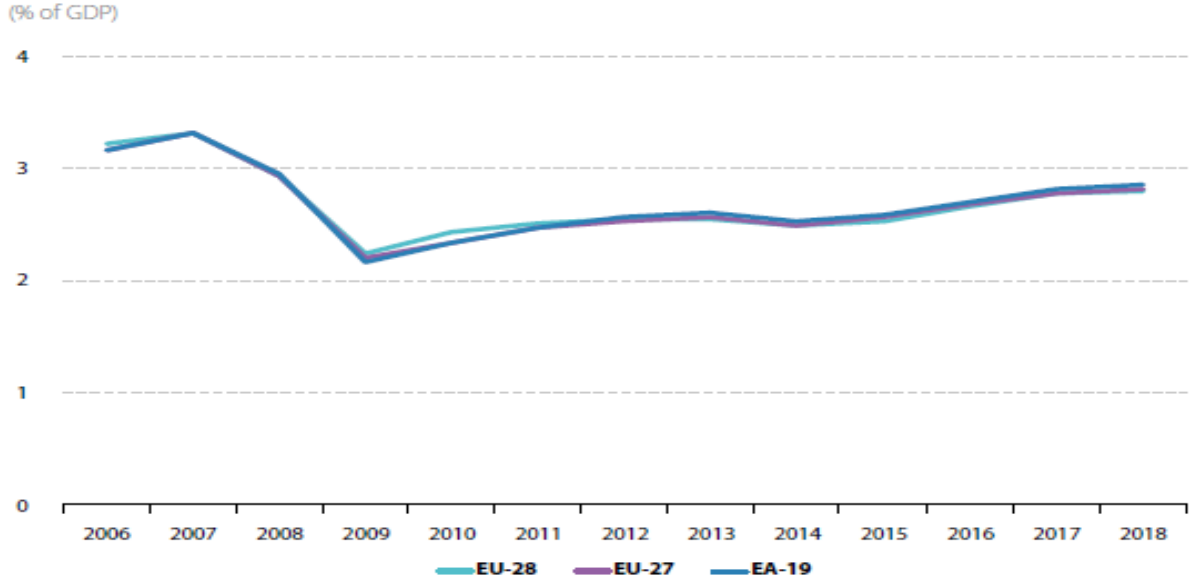
Low corporate taxation, along with permissive regulation, could create conditions similar to tax havens even in the European Union. This also derives from the Garcia-Bernardo workpaper (2017), according to which the Netherlands and Ireland (along with UK, Switzerland and Singapore) are attractive destinations in directing international investments and allow the transfer of capital without taxation, as well as Luxembourg and Cyprus, which attract and retain foreign capital through low taxation and permissive regulations.

As for EU corporate income tax rates, they continue to fall. The average corporate income tax rate in the EU-27 was 21,5% at the beginning of 2020. Since 2013, the average

rate for the EU-27 has decreased by 1,7 percentage points, and the legal corporate income tax rate varies between a minimum of 9% in Hungary and a maximum of about 30% in Malta, Portugal, France and Germany. Belgium, Greece and France significantly reduced their tax rates in 2020 (4,6 pp and 4,0 pp, respectively).

Revenues from corporate income taxation remained at 2,8% of GDP in 2018. After their sharp decline in 2007-2009, corporate revenues gradually increased, but have not yet reached the pre-crisis levels.

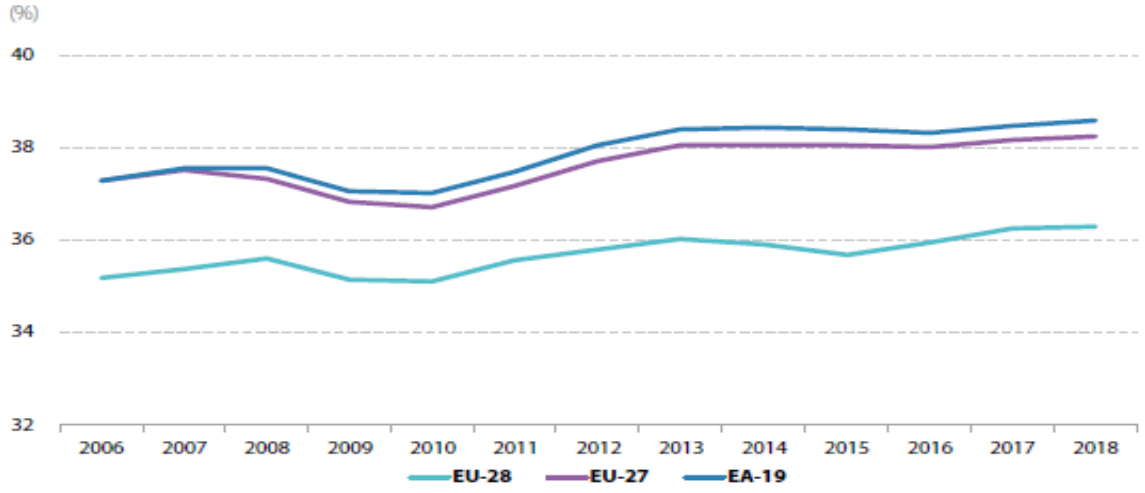
Figure no. 3. Revenues from corporate income taxation (%), 2006- 2018



Source: European Commission, 2020. *Taxation Trends in the European Union*. [online] Available at: <https://ec.europa.eu/taxation_customs/taxation-trends-european-union_en> [Accessed 1 February 2021].

The implicit tax rate on labor is defined as the sum of all direct and indirect taxes and social contributions of employees and employers levied on the income from employment divided to the total compensation of employees. It is calculated only for the employed labor force (thus excluding the tax burden on social transfers, including pensions).

Figure no. 4. Implicit tax rate on labor in the period 2006 - 2018



Source: European Commission, 2020. *Taxation Trends in the European Union*. [online] Available at: <https://ec.europa.eu/taxation_customs/taxation-trends-european-union_en> [Accessed 1 February 2021].

The ITR on labor for the EU-27 was 38,2% in 2018, the same as in 2017 and 1,5 pp above the level reached in 2010; this value is approaching the rate in the euro area (38,6% in 2018), but with a significant gap compared to the EU-28, due to low labor taxation in the UK (ITR on work of 25,6% in 2018).

The level of the tax burden on labor varied substantially between Member States in 2018. The highest ITRs on labor are found in Slovakia (43,8% in 2018), Greece (43,2%) and Italy (42,7 %), and the lowest in Bulgaria (24,7%), Great Britain (25,6%) and Malta (25,7%).

In the EU-27, most Member States recorded increases in ITRs on labor between 2017 and 2018, with the highest increase in Malta (from 23,5% in 2017 to 25,7% in 2018), and the largest decrease in Hungary (from 39,6% to 38,9%).

3. Ensuring a friendly environment for companies in the context of globalization

With the new changes brought by globalization and the industrial revolution, a new dynamics of enterprise development and competition has been created, by changing their organization, production, marketing and distribution at national and global level. In this way, companies are also changing the nature of competition, which increasingly includes, at the international level, inter and intra-sectoral relations.

The nature of the sector to which the company belongs plays a certain role; the more innovative and competitive this sector is, the easier it is for the company to adapt and remain competitive, exploiting externalities or "knowledge dissemination effects" through intra-sectoral cooperation.

The key elements of the development of companies and their competitiveness in the rapidly changing global economic environment are the capabilities: to adapt to new market conditions; to identify new outlets; to induce innovations within the company, to reduce as much as possible the costs of marketing and technology development by using networks and establishing links with other companies.

3.1. Market entry and exit barriers. Indicators of Doing Business Report

In industries characterized by rapid technological change or international mobility, not removing barriers to competition can lead to disadvantages for small businesses and the economy as a whole. Therefore, an increasing number of countries have tried in recent years to reduce these barriers (the regulations) in order to improve their quality and effectiveness.

In time, globalization has affected the environment in which companies operate, by imposing different types of barriers. We refer in the paper to the barriers to entry / exit the market, more precisely, t*he legislative and administrative barriers to entry and exit the markets*, which have the effect of limiting entrepreneurial initiatives and restricting competition, and is materialized as an additional cost for companies.

Small and medium-sized firms are affected in particular; there are studies confirming that when the costs created by entrance barriers, especially fixed costs, are high, the average size of firms entering the market will be higher. Instead, firms already in the market will rely on the gain generated by the existence of these barriers and will be less interested in increasing their productivity and efficiency.

At the same time, regulations with a restrictive effect on entering and leaving markets affect the allocation of resources and change the structure of investments.

As a result, they have the effect of redistributing resources from favorable market areas, where they would naturally invest, to less profitable ones. But the tendency of economic agents to serve profitable markets remains: they try to overcome administrative bottlenecks by various means. This explains the fact that the countries where the costs of entering the market are high are also those where the corruption and the underground economy are significantly higher.

We also believe that in the context of globalization, entry / exit barriers for companies can be reflected in the indicators below, indicators that characterize the ease of doing business (Doing Business, conducted by the World Bank and PricewaterhouseCoopers).

Table no. 1. Doing Business indicators and their meaning

Indicator	Explication
Starting a business	Procedures, time, cost, minimum capital paid to set up a SRL
Obtaining building permits	Proceduri, timp, cost pentru a completa formalităţile cu construcţia unui depozit, controlul calităţii şi mecanismele de siguranţă
Getting electricity	Proceduri, timp, cost in vederea conectarii la reteaua electrica, fiabilitatea furnizarii electrice si costul consumului de electricitate
Property registration	Procedures, time, cost of transfer of ownership and quality of land management system
Obtaining loans	Collateral laws and credit information systems
Protecting minority investors	Minority shareholders' rights in transactions and corporate governance
Paying taxes	Payments, time, the total tax rate for a company in order to comply with tax legislation
Cross-border transactions	Time and cost of exporting products with comparative advantages and importing automotive components
Development of contracts	Time and cost of resolving a trade dispute and the quality of legal proceedings
Solving insolvencies	Time, cost, result and recovery rate for a commercial insolvency and the strength of the legal framework for insolvency
Labor regulation	Flexibility of labor regulation and aspects of work quality

Source: World Bank Group, 2020. *Doing Business 2020. Comparing Business Regulation in 190 Economies.* [online] Available at: <https://openknowledge.worldbank.org/bitstream/handle/10986/32436/9781464814402.pdf> [Accessed 1 February 2021].

At the international level, the efforts in the fight against bureaucracy have been intensified, by supporting the private sector, respectively by implementing 294 reforms for the business environment. These reforms focused on starting a business, managing construction permits and trading across borders.

The Starting a Business indicator continued to improve, with 50 reforms in the year under review. The indicators Enforcing Contracts and Getting Electricity also recorded significant values at the level of reforms (49, respectively 26).

In addition to reforms that have addressed issues related to starting a business, managing building permits, getting electricity and paying taxes, measures have also been implemented on the functionality of credit bureaus and registries, the development or improvement of online platforms to comply with regulatory requirements, improve the reliability of electricity supply, reduce certain taxes, strengthen the protection of minority investors, streamline property registration processes and international automation of commercial logistics, insolvency resolution (a characteristic feature of these reforms was the introduction of a reorganization procedure).

Therefore, the most frequent regulatory changes in the last 17 years that have helped to develop a friendly business environment include simplifying the requirements for setting up a company, facilitating tax compliance tasks, increasing access to credit and ensuring the survival of viable businesses.

It should be noted, however, that not all measures aiming at removing barriers reached their original purpose, in 2018/19, being implemented reforms that actually produced the opposite effects. We can list in this sense the increase of regulatory costs (we refer to the costs of setting up companies) or the problems of design and implementation.

3.2. Investment barriers for Romanian companies

We bring into discussion the Romanian companies, more precisely, the problems they face, according to the National Bank of Romania (NBR) (2020, December), respectively the production and labor costs, the availability of well-trained labor and the lack of demand. Also, the level of taxation, respectively the unpredictability of the fiscal environment, as well as the access to financing are considered to be a problem at the level of companies.

From a structural point of view, for large companies, the lack of a well-trained workforce is a much more pressing problem compared to SMEs, which are not affected to such an extent by this aspect. The analysis by activity sectors shows that the industry strongly feels the lack of a well-trained workforce. Sectors that are characterized by a higher degree of technology and / or automation have a more negative perception of the problem of lack of well-trained staff.

According to the latest EIB Investment Survey (European Investment Bank EIBIS 2020), the share of Romanian companies making investments continues to remain one of the lowest compared to the European Union, respectively only 71% of Romanian companies have invested, compared 85% at EU level.

The main investment obstacles of Romanian companies, respectively the internal barriers within enterprises, as well as the main obstacles in the operating environment of companies, according to EIBIS 2020, are:

◄ weaker financial situations of companies - Low profitability and high debt burden primarily limit the cash flow of the company, as well as access to external sources of financing (banks, non-bank financial institutions, etc.);

◄ the financial health of companies determines their access to credit, and Romania has a significant share of companies, which are undercapitalized or operate with negative equity.

In addition to financial constraints, corporate investment activity can be hampered by a number of obstacles in the business environment: uncertainty, business and labor market regulation as key issues for Romanian companies (frequency and unpredictability of regulatory changes, which can cause difficulties in long-term investment planning and therefore impede investment).

We also discuss the digital transformations implemented by Romanian companies, compared to those in the EU. Little over half of companies (56%) say they have implemented at least one digital technology, partly or wholly, close to the average of 63% of all EU companies. Comparing the implementation of individual digital technologies, Romanian manufacturing companies use less 3D printing and automation through advanced robotics compared to those in the EU. We also have more reluctance to use drones and augmented or virtual reality, but we are more open about using platform technologies.

3.3. Fiscal facilities in order to support the activity of companies in the context of globalization and the industrial revolution

A friendly business environment, from a fiscal perspective, means adequate tax legislation, which favors the establishment of companies and the continuity of their activity, through the existence of few barriers / constraints on entrance / exit the market, but also the granting of fiscal incentives in order to help them.

At EU level, in addition to reducing corporate tax rates, measures have been taken on a number of tax facilities to support business activity. Research and development, as well as other actions aimed at encouraging business development, receive more support from governments to be competitive - Denmark, Germany, Italy, Poland (increase in general tax deduction, special provisions for SMEs).

Measures are also being taken to encourage innovative businesses and start-ups - Latvia, Ireland (a reduction in capital gains tax for entrepreneurs). In terms of capital investment, Hungary, Portugal and Cyprus have introduced tax incentives for investors offering financing to young businesses.

Tax incentives are granted, among other things, depending on the objectives proposed at a given time (increasing private investment in a specific field, stimulating small and innovative companies, stimulating skilled labor in a specific field), which have the possibility to choose from a wide range of types of tax facilities, including:

- tax incentives focused on volume - additional deduction of research and development expenses for the calculation of taxable profit, profit tax exemption for those who carry out exclusively research and development activities;
- tax incentives addressed to certain categories of companies (for startups or small and medium enterprises);
- tax incentives addressed to employees working in the field of research and development, if the skilled labor force is not sufficient: reductions in income tax and / or mandatory social contributions related to the salaries of staff engaged in research and development.

In addition to the above ones, there are also types of tax facilities that can have beneficial effects on stimulating this type of activity, namely tax facilities granted by the authorities to encourage investment in a less economically favored region, or in a certain sector of activity: tax facilities on reinvested profit, favorable treatment for individual investors (business angels), exemptions or favorable tax rates for local taxes.

As for the investments made in the field of research and development, they are particularly important, with a direct impact on employment, business development, development and economic growth.

At EU level, according to the SME Annual Report 2018-2019, in most countries there was a significant difference between the research and development expenditures of SMEs and large enterprises. Large companies have shown higher spending on research and development in 24 of the 27 Member States for which data is available. The exceptions were Bulgaria, the Czech Republic, Lithuania and Romania, where SMEs spent more on research and development than large companies.

Investments in research and development and innovation are essential in the context of the transformations generated by new technologies, being necessary for Romania to adopt a model of economic growth specific to developed countries, based on value creation. A positive example of the effects that tax facilities can have is the IT industry, which has evolved in the last almost two decades, currently reaching over 6% of GDP.

We believe that, in addition to the existing facilities, a legislative framework favorable to intellectual property rights should be considered, as fiscal incentives can be granted in this context, both in the investment years, namely in the research and development phase, and in the exploitation of the related intellectual property rights, through Innovation Box or Patent Box regimes, as they exist in other states.

For such facilities, there are good practices identified by other countries to boost investment in intangible assets - trademarks, patents, software, trade secrets and others - through attractive tax policies. For example, UK Patent Box law allows companies to apply a lower corporate tax rate (10% compared to the standard 20% rate) to profits from patented inventions and other equivalent forms of intellectual property.

Other countries, such as Belgium, Switzerland, France, Ireland, Italy, Luxembourg, Malta, the Netherlands, Portugal, Spain, Hungary, offered companies, in 2017, various tax facilities that promoted innovation and research - development. Therefore, Romania could also introduce, in turn, a Patent Box regime that would provide a lower corporate tax rate for profits from the exploitation of intellectual property rights - obtained through a full or partial exemption from income eligible.

Also, a tax advantage held by Romania for potential investors is the "holding" tax regime (introduced in 2014), according to which companies of this type registered in Romania benefit from a special tax treatment: non-taxation of capital gains from the sale of shares in companies from Romania or from states that have concluded double taxation agreements with Romania if the seller meets the minimum holding conditions: at least 10% for at least one year. Under similar conditions, the holding companies from states with which Romania has concluded Conventions for the avoidance of double taxation can benefit from the non-taxation of the gains from the sale of shares in Romanian companies

It is also possible to obtain a reduced taxation (or even a non-taxation) of dividends received from abroad Romania, as well as for those paid to non-residents, under the Conventions for the avoidance of double taxation, or according to the European Directive on the common tax regime applicable to parent companies and their subsidiaries in different Member States under certain conditions.

As the global tax legislation, namely the rules against aggressive tax structures / anti-abuse rules, which is constantly changing, it is expected that the trend in the coming years will be to pay more attention to how to structure any investments, because the tax benefits might not be granted if such holding companies do not have a real economic substance and are used strictly to obtain tax advantages.

Specifically, under legislation introduced in recent years, such transactions will be reported to the tax authorities in the EU (according to the "DAC 6"), and will be interpreted as that, if they were used mainly for tax purposes (obtaining facilities such as the holding regime), the non-taxation applied by such companies could be challenged by the authorities, resulting in additional tax payment obligations.

Fiscal measures can attract capital in the extent they support the business environment and regulate the complex situations of the current economy, and the current fiscal provisions for the holding regime represent a strong point for Romania to foreign investors. Also, other "attractions" for investors are the relatively low corporate tax rate (16%), a network developed by Conventions to avoid double taxation (around 90 treaties) or the carry-over and transmission of fiscal losses in the context of internal reorganizations.

Thus, in terms of taxation, in addition to the place in the ranking in terms of favorable tax regimes or relatively low tax rates, attention must be paid to the stability and predictability of tax legislation, but also to the ease of tax administration by digitizing and reforming ANAF in order to allow investors to manage medium and long-term plans

4. Conclusions

The objective of this paper was to highlight the main fiscal changes in companies due to globalization and the technological revolution (digitalization), and in this sense we used the evolution of the implicit tax rate in the European Union, in the period 2006-2018 (we used this type of rate because it captures the best the fiscal changes that occurred in the analyzed interval).

The differences between consumption tax rates, labor tax rates, corporate income tax rates are significant. In 2018, the implicit consumption tax rate ranged from 14% in Spain to 26% in Hungary, labor taxes (including social security contributions paid by both employer and employee) ranged from 25% in Bulgaria to 44% in Slovakia, and the implicit corporate tax rate is less or equal to 10% in Cyprus, Luxembourg, Hungary, the Netherlands and Ireland, while in France it is over 35%.

We also discussed the influence of globalization on the environment in which companies operate, respectively the obstacles / barriers encountered, as well as the fiscal facilities necessary to continue their activity in a favorable economic environment (facilities for research and development, various tax incentives , as well as the comparative situation of Romania with the European Union).

In our opinion, the main barriers in the way of carrying out the activity by the companies are concretized in the Doing Business indicators (especially regulatory barriers). With the intensification of globalization, the trend of reducing / eliminating barriers has intensified globally, and the Doing Business Report highlights the best this aspect, through indicators that refer to aspects related to starting a business, managing building permits, getting electricity, paying taxes, the functionality of credit bureaus and registries, the development or improvement of online platforms to comply with regulatory requirements, improving the reliability of electricity supply, reducing certain taxes, strengthening the protection of minority investors, streamlining property registration processes and international automation of commercial logistics, solving insolvencies.

It should be mentioned that globalization has had positive effects on legislative barriers worldwide, which materialized through the implementation of 294 reforms for the business environment, the aim being precisely to reduce / eliminate the obstacles. Significant progress has been made globally, digitalisation being a key factor in this context.

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COORDINATES OF BUSINESS DEVELOPMENT SUSTAINABILITY FROM THE PERSPECTIVE OF ENVIRONMENTAL MANAGEMENT

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Abstract: *Integrated in all projects and acting at all levels of an organization, addressing the sustainability of business development from the perspective of environmental management, is the will of managers to build and develop long-term business while maintaining the balance between economic performance, environmental friendliness and a constant search for quality. relationships with people and business partners. In order to achieve the objectives set by the policy of sustainable business development it is necessary for the organization to identify both environmental issues, existing legal provisions, objectives and targets, as well as established responsibilities and deadlines. All these aspects are presented in the case study which illustrates the way in which the social and environmental responsibility of the Michelin group is engaged in the relations with its suppliers and their subcontractors.*

Key words: *sustainable development, environmental management, business.*
Classification JEL: *Q01, Q56, O10.*

1. Introduction

Currently in the competitive business environment, the efficiency of operations is mandatory in order to keep overhead costs as low as possible. The difficulties encountered by companies in achieving the objectives and goals set, are often the consequence of a lack of respect for the conditions of quality, environment, safety and health of staff, information security, etc. In order for a company to carry out its operations systematically, it must take into account the laws in force and the conditions for satisfying customer requirements.

An environmental management system (EMS) is a series of policies that determine the continuous improvement of a company's environmental position and performance.

An example is the ISO 14001 Environmental Management Systems. With the growing public interest in environmental protection, it is becoming increasingly clear that companies 'attitudes towards the environment determine customers' loyalty to the company. Reducing the impact on the environment, given that society's responsibility, legal requirements, rising energy prices are increasing, becomes a problem for companies.

An already proven possibility to solve it is the ISO 14001 environmental management system (EMS), through which environmental pollution, waste of energy and resources can be minimized. The implementation of an environmental management system within an enterprise is necessary, because each product, process is related to the environment, to the living environment created by man.

2. Synergistic approach to the concepts of environmental protection and sustainable development

More and more organizations have become and are becoming aware that they need to pay more attention to managing the impacts that their activity produces on the environment. To this end, the development of an environmental management system (EMS) that works correctly and efficiently becomes a priority. An environmental management system helps its organization minimize environmental impacts.

The most important improvement that an EMS brings to the business is a systematic and controllable approach to the environmental issues in the organization.

The correct functioning of an EMS ensures the improvement of the organization's performance, through the positive impact it can have on the following:

- cost reduction;

- risk management;
- increasing credibility;
- increasing competitiveness;
- relationship with partners;
- staff motivation

The ISO 14001 standard has the stated general purpose of supporting environmental protection, pollution prevention, in balance with socio-economic needs.

As a specific purpose, the standard aims to provide organizations with all the elements necessary for the effective construction of an EMS, which can be integrated into the overall management of the organization to enable the achievement of environmental and economic objectives. The standard sets out the requirements for an EMS, which would allow an organization to formulate its environmental policy and objectives taking into account the legislative framework and the environmental aspects of its activities. The ISO 14001 standard can be applied by any organization, regardless of type, size and regardless of the types of activities carried out, not only industrial ones. Environmental management, like any management, goes beyond the strict letter of the law and implements its spirit, the principles of environmental protection.

Methods of approaching environmental protection in enterprises can be classified into two broad categories:

- The "reactive" approach seeks solutions to transform the pollution resulting from the production process into a less dangerous form.
- The "preventive" approach, on the other hand, modifies the production process in such a way that the pollution is lower from the very beginning.

The reactive approach leads to the application of end-of-pipe technology, which usually complicates the production process, increases energy and material consumption and risks. After all, they do not reduce the amount of pollutants (sometimes they even increase it), they only transform it.

The preventive strategy (cleaner production) investigates the reason for the pollution and gets involved at the source of the problem.

Practical measures in the case of the preventive strategy:

- changes made to the product (homogeneous, natural basic materials)
- greater involvement (employee motivation, work process organization, saving)
- replacement of basic and auxiliary materials (natural materials, non-toxic chemicals)
- technological changes (technologies with low energy and material consumption)
- internal reuse
- recycling
- neutralization.

All organizations must continually analyze and improve their environmental management system, with the goal of improving overall performance.

These concerns are part of the development of economic and legislative policies, measures to encourage environmental protection, increasing stakeholder concern and the sustainable development of the environment. In order to achieve such goals, environmental analyzes and audits alone are not enough. In order for some companies to meet the legal requirements and their own environmental objectives, they must perform these analyzes within a structured environmental management system that is integrated into the overall management activities.

This structured environmental management system is the target of international standards included in the ISO 14000 series, standards that synthesize the specific elements of an environmental management system. The provisions of this management system can be integrated into the structure of any management requirements, in order to achieve environmental objectives or set economic objectives.

The main purpose of an environmental management system is to ensure environmental protection; pollution prevention; ensuring a balance between these elements and social and economic needs.

The application of the environmental management system allows the organization to establish and evaluate the efficiency of the procedures used for the elaboration of its environmental policy and at the same time to submit to them and to demonstrate this conformity.

The management of the organization must ensure the allocation of resources so that the environmental management system can begin its activity to be maintained, to define and communicate the responsibilities of the environmental management system.

Appropriate training needs are also needed to ensure the implementation and operation of an environmental management system.

At the same time, the organization must develop a procedure for internal communication, reception, documentation and response to relevant information and requests from stakeholders. In order to promote an environmental management system, it is necessary to develop documents, maintain and train a control system.

The organization must establish, analyze, and review emergency preparedness procedures. Any organization promoting an environmental management system must establish and maintain procedures for defining responsibilities for decision-making steps, as well as treating and analyzing non-compliance, taking measures to reduce the impact produced, initiating and completing corrective and preventive actions.

3. Integrating the environmental management in the business development strategy from the perspective of MICHELIN ROMANIA

The company MICHELIN ROMANIA SA - The working point «Floresti Anvelope» has implemented an Environmental Management System according to ISO 14001-2015, certified by UTAC - France, according to certificate no. SME / 1830-12.

Under the impetus of its founders, Michelin has taken on the mission of responsibly contributing to the progress of mobility expressed through its brand signature "A better way to move forward". The Group has chosen to do this through innovation and quality basing its development on the following values: respect for customers, respect for people, respect for shareholders, respect for the environment and respect for facts.

Integrated in all projects and acting at all levels, this structured and global approach represents Michelin's will to build its long-term development while maintaining the balance between economic performance, respect for the environment and a constant search for quality in its relationships with people and partners. the company.

Michelin works with suppliers who will meet its requirements for quality, cost, delivery time and reliability and who are committed to making progress in terms of respect for people and the environment.

The Michelin Group's corporate social and environmental responsibility (CSR) is engaged in relations with its suppliers and their subcontractors. For many years, Michelin has been pursuing a responsible procurement process with its suppliers through the integration and operational decline of sustainable development principles.

In order to build beneficial relationships with our suppliers for everyone, we expect them to adhere to the following principles of our sustainable development policy and to apply them in their own supply chain.

With regard to environmental protection and to limit environmental risks through the supply chain, the company requires suppliers and subcontractors to:

- compliance with the rules and regulations in force in their country, but also in any country where Michelin sells and distributes the products supplied; at our request, more stringent Michelin standards may also apply to certain projects and certain geographical areas,
- implementation of an environmental management system to measure the possible negative effects generated by their activities on the environment,
- reduction and management of waste, toxic / hazardous substances and packaging throughout the life cycle of their products,
- reduction of greenhouse gases,
- preserving natural resources and ecosystems but also maintaining biodiversity,
- the development of products / services with low impact on the environment in order to reduce their impact throughout the life cycle, while maintaining and improving their quality,
- their collaboration in the life cycle analyzes performed by Michelin.

These procedures will not only cover the supplier's own activities, but he will have to engage in the promotion of these good practices by his own suppliers. Particular attention will need to be paid to reducing the CO2 footprint of transport to or from the supplier's plant. A natural rubber manufacturer and processor, Michelin respects and wants to promote five commitments made in the Michelin Procurement Principles in the field of natural rubber.

I.Respect for people
- Favoring the resolution of conflicts related to land ownership.
- Improving working conditions and living environment.

II. Environment protection
- Fight against deforestation.
- Managing the potential impact of cutting down rubber trees in relation to fauna, flora and the environment.

III. Improving agricultural activities
- Promoting best agricultural practices to its suppliers, professional organizations, local cooperatives or planter groups.
- Actions to increase agricultural yields.

IV. Proper use of natural resources
- Increasing the effectiveness of natural rubber.

V. Correct behavior
- Fight against any form of corruption.
- Dialogue with local and international participants in order to contribute to the development of the sustainable natural rubber chain.
- Transparent actions.

Natural rubber, due to its environmental and social impact, is subject to a special process. Drafted with the help of all participants, and in particular with that of NGOs specializing in environmental and human rights protection, the Sustainable Natural Rubber commitment drafted in 2016 is a contractual reference for the Group's suppliers.

In addition to quality audits, with the help of a rating company, Michelin measures the level of CSR maturity of its suppliers. This assessment triggered by an analysis of potential risks is presented in the form of an online questionnaire to be submitted by the supplier. The analysis of strengths and weaknesses in the environmental, social and ethical fields can lead, if necessary, to the implementation of action plans, or according to the level of criticality in a more special audit in the plant.

Michelin regularly organizes performance review meetings with its main suppliers. The frequency and content of these meetings shall be determined by agreement with the provider.

The purpose of these meetings is to:

- recapitulate and reach agreement on:
  - the complete and factual balance of the supplier's performance (quality, compliance with commitments, competitiveness of commercial offers, dynamic progress, innovation and value creation, Social and Environmental Responsibility, Business Continuity Management),
  - the plan for continuous progress, with the definition and planning of improvement objectives,
  - evaluation by the supplier of the quality of relations with Michelin in terms of payment conditions, relationship management, supply chain management, etc.
- share your vision on our technical and business relationships

The methodology is based on international CSR standards (Global Compact, ISO 26000). It is divided into 4 themes. Only the specific criteria of the stakes in the sector of activity of the respective supplier are taken into account.

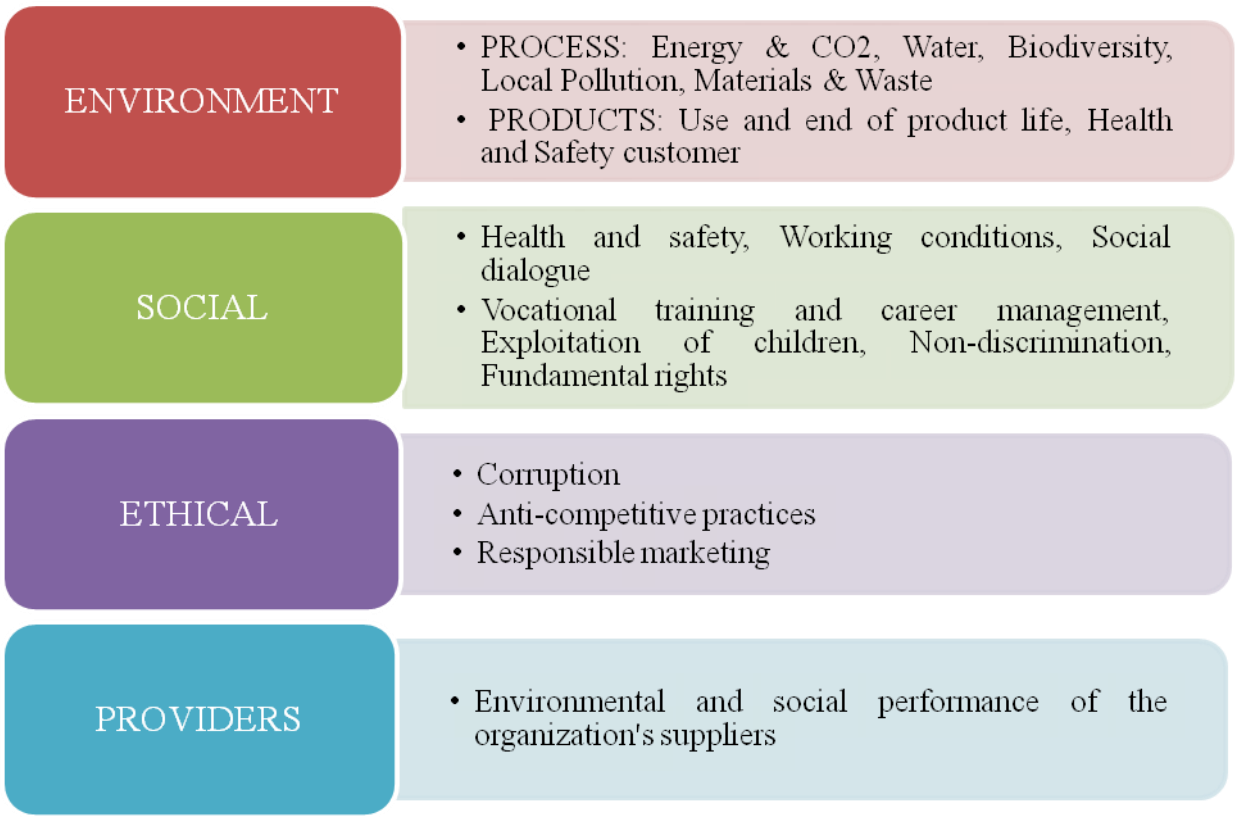

Figure no. 1. Topics of the meetings within Michelin Romania
Source: Processing after https:// michelin.com/

Materials management is monitored through the integrated Management System ISO 9001, ISO 14001, using the Procedure for procurement of materials / consumables, spare parts and fixed assets and control of suppliers of materials, spare parts and services Safe handling of substances dangerous comply with the legal requirements in force.

The rules for storage / storage of chemicals apply according to the internal instruction, identification of types of hazards, separation of incompatible products, storage of liquid products in retention tanks. Factory level audits were performed.

Each waste generated in the manufacturing flow of tires and rubber membranes has an associated maximum permissible indicator, as% of production. Annually, action plans are established and implemented to reduce the waste generated and implicitly to minimize the use of raw materials. In the factory there is a person responsible for technological losses who ensure the assessment of compliance with the annual targets set for raw materials and waste from the manufacturing process.

Workshop managers and operational group managers ensure the implementation of action plans to reduce waste, respectively the loss of raw materials and associated utilities. No actual audit was performed for the waste. A study is underway on: "Monitoring system for waste, toxic and hazardous substances, software application for waste management".

The minimization of the consumption of raw materials and implicitly of the waste is done by applying the provisions from the technological processes and the consumption norms established for each type of raw material and part of the installation.

These aim, among other things: the use of raw and auxiliary materials with maximum efficiency without compromising the quality of the tires.

The supply and discharge of wastewater is regulated by the water management authorization no. 94/2018. Technological and rainwater are discharged into the Prahova River through the G2 drain. The domestic waters are discharged into the sewage system inside and from here in the treatment plant of Floresti locality.

4. Conclusion

The implementation of an environmental management system in a company influences every aspect, and provides guidance on the operational elements that build its entire activity.

In order to support the actions deriving from this approach, it is necessary to promote communication and prepare all employees. This is an important step because awareness of the benefits and presentation of the implementation plan brings the advantage that employees become receptive to the implementation of the environmental management system.

The strategic approach of integrating environmental management into the sustainable development of organizations' business is based on reducing the impact of their operations on the environment, throughout the life cycle and optimizing processes so as to use natural resources efficiently and reduce waste and emissions. air, water and soil. The employees involved are essential for improving environmental performance.

From the case study presented we can conclude that Michelin Romania has in the organization's strategy as a target to continue implementing Environmental Management, the company's management realized that avoiding environmental accidents has much lower costs than removing the consequences of these accidents.

The integration of the environmental management concept in the business development strategy within the Michelin Romania organization is in full swing and the aim is to improve and refresh the data as the dynamics of the activity bring permanent changes that must be communicated to the authorities and taken for compliance measures such as authorization environmental, waste stock reporting, contracts with specialized and

accredited companies for transport, processing or disposal of waste. Involving all employees in environmental protection activities and rewarding ideas for improving the activity that lead to the reduction of raw material losses and minimizes the risk of environmental accidents.

Environmental management should not be seen as a cost generator, implementation costs will be recovered through energy efficiency, limiting recovery costs in case of environmental accidents.

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ISSUES CONCERNING THE EVALUATION OF THE QUALITY MANAGEMENT MODEL APPROACHED AT THE LEVEL OF PRE-UNIVERSITY EDUCATION INSTITUTIONS

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Abstract: *Quality and efficiency are two very important pillars of educational reforms around the world, which must be considered when building national management and quality assurance systems even at the level of the Romanian pre-university education system. Among the recommendations of this paper is a model of quality management in pre-university education, based on specialized reference, a model that must be measured permanently, being analyzed as a continuous process. The best way to ensure quality is systematic, ongoing attention to improving it and including quality in an organized quality assurance system. Quality and performance evaluation must be analyzed in parallel with the implementation of evaluation methods, to increase institutional autonomy, but also highlighting responsibilities. The introduction of systematic evaluation, with the main reason for better use of resources, makes the objectives set in the strategic management policy be achieved effectively.*

Keywords*: quality, quality management, performance evaluation.*
JEL Classification*: I21.*

1. Introduction

Through theoretical research formulated and conducted, this scientific approach is in the field of national concerns and not only to increase the quality of education, trying to identify those positive aspects, accumulations, and examples of good practice, which must be exploited by schools, but also weak identified in shortcomings, deficiencies, negative aspects and which need to be eliminated from the practice of organizations providing educational services, from the pre-university level in Romania, respectively the gymnasium school units. This area is recognized as a priority in the context of globalization and the full manifestation of society based on knowledge and innovation.

2. Conceptual Analysis of the Main Terms on Quality Management

In Romania, education has undergone many changes over the years due to various reforms, which aimed, in principle, only the formal definition of the education system in the new socio-economic context and did not aim at a reform or a structural change, respectively of the content or the extent to which the change of content was made was too small concerning the needs of the system. These qualitative changes should take into account the current situation of the education system, the country's economic perspective in the context of market economy, European integration and globalization, the genetic availability of the Romanian nation, the positive element of the old system, the Romanian educational tradition, as well as the educational ideal desired at the level of the whole society, an ideal to be adopted by all institutions and to ensure the socio-economic evolution of Romania.

The concept of quality is also understood through competitiveness and the ability to excel. Quality is the basis of the positioning of organizations, institutions, attracting the degree of interest shown to them. Quality refers to the number or quantity of resources consumed to meet standards and meet requirements. Over time, the perception of the concept has evolved according to the social, economic, and industrial evolution of humankind, reaching today to go through three stages to achieve quality: top management, quality departments, and executors. The school organization is given by the characteristics of the product or service and the extent to which it meets expectations. Quality is not to be

confused with excellence. In the literature, this concept has a wide range of definitions and explanations.

In this context, (Toca, 2007) educational management has key role, human training of future specialists and managers, to put into practice the social desideratum of society, and when reforms are made, they must have based on an in-depth study of what is good and outdated in the old system and what is to be achieved in the future. Therefore, the school management has an enormous responsibility because he is the person who exercises duties, roles, and competencies within the basic school organization of the education system.

According to Rothwell W. (2004), managers must use the knowledge of their predecessors to substantiate and implement a quality strategy at the school organization level, a strategy that has a complex structure that combines both classical components and uncertain elements and is difficult to control. Quality management at the level of the school organization refers to the totality of the work processes conducted according to some methods, techniques, and procedures through which the management of the educational process at the school level is conducted, as a basic unit of the pre-university education system. (Man, 2006)

The school faces difficulties in the socio-professional orientation of its students, due to economic fluctuations and demographic phenomena such as declining birth rates, labor migration, etc., but also since society does not have established long-term development directions. medium and long. Efficient quality management can also be translated by the correct orientation of the young people, depending on the skills, talent, needs, and intellectual abilities of each one. Although it is a difficult desideratum due to the nature of the diversity of variables at macroeconomic level (European, national), but also microeconomic (regional, local) and which must result in an accumulation of evolutionary steps, activities, and professional positions, it is a direct result of efficient quality management at the level of the school organization. The correct orientation of young people generates satisfaction and professional performances both at the personal level and at the level of the employing organizations.

Quality and efficiency are two particularly important pillars of educational reforms around the world, which must be considered when building national management and quality assurance systems and at the level of the Romanian pre-university education system. This alignment is necessary to ensure a real and functional integration, from an educational point of view, of Romania in the European Union. The need to be compatible with the education systems in the European Union offers only a part of the arguments for the development of management systems and quality assurance of education in Romania because the implementation of the quality management system will lead to the creation of new models of thinking and behavior. to the continuous improvement of all educational processes in schools. Romanian initiatives in the field to be equitable (theoretically and methodologically) with what is happening at the macroeconomic level.

3. A Conceptual Model of the Quality Management Evaluation

The school organization must satisfy the needs of the beneficiaries, to exceed their requirements. All this is generated by responsible institutions that bring added value and created value. The autonomy of school organizations and the existence of an educational leader are the basis of institutional development, they generate innovative directions and develop partnerships that lead to continuous quality improvement. Quality is also correlated with the act of communication that involves introspection, analysis, and knowledge.

A quality management model in pre-university education must be permanently measured, being analyzed as a continuous process, according to the figure below:

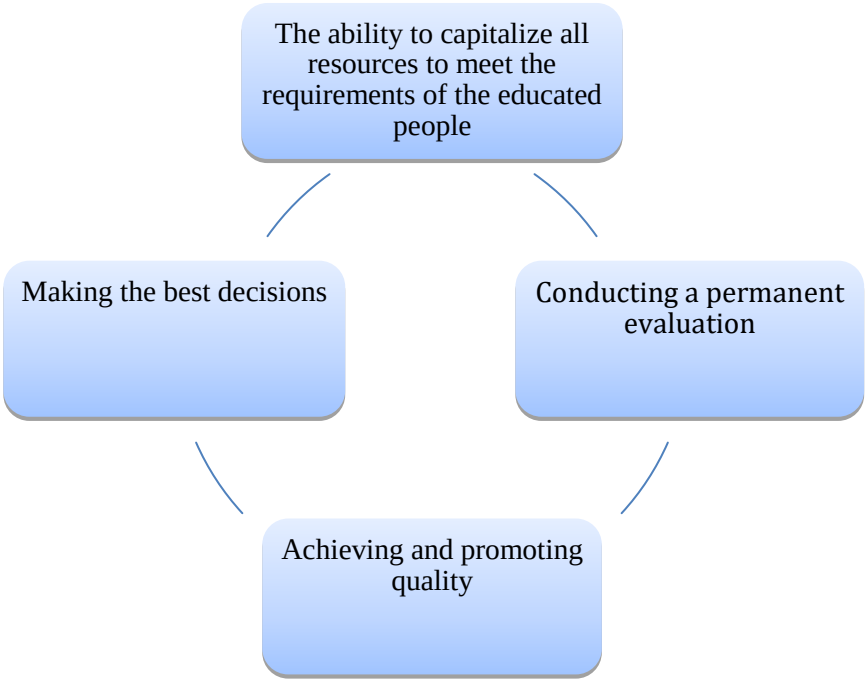

Figure 1: The Conceptual Framework of the Quality Management Evaluation
Source: In the author's vision

To achieve quality education, performance, to continue the tradition of the Romanian school, each school organization must propose values and principles in the field of quality education, such as:

• training graduates able to use scientific, technical, and cultural-humanistic knowledge with real chances of success in the labor market and to provide them with a long-term education.

• training of cognitive abilities and professional skills, assimilation and consistent practice of moral, aesthetic, and civic values that contribute to the development of student's personality.

• ensuring a work climate based on responsibility and mutual respect, so that each participant in the educational process to make the most of their professional and intellectual potential.

• encouraging the involvement of all the staff of the educational unit and the students in the knowledge, understanding, and improvement of the entire educational process in the unit.

• ensuring the increase of the performances of the educational process through a scientific research activity following the needs and expectations of the students, parents, and the local community by involving both the teaching staff and the students.

• the use of information and communication technology, as a support for the continuous improvement of the quality of the educational process, by the entire staff and at all levels of the managerial organization.

Quality management approached through the prism of the three dimensions, quality control, quality assurance, and quality development are a complete task and requires a re-examination of all the tasks of the institution. Quality management is impossible without:

• management of the leading school organization, evaluation/motivation meetings.

• quality training and continuous training for all staff.

• a quality framework – logistics, infrastructure, decision-making autonomy.
• public relations through effective communication with beneficiaries (students, parents) and other actors involved.

The reasons for using the continuous measurement procedure are that it strengthens the concept of quality and at the same time improvements are possible regarding assurances that the requirements of the beneficiaries have been met, the ability to set a set of objectives, and pursue their achievement, setting comparative standards for continuous process improvement, imposing transparency and establishing a grid for monitoring individual performance levels, identifying certain shortcomings in quality standards and setting priorities for eliminating these shortcomings, justifying resource use, obtaining feedback in efforts to identify weaknesses and eliminate them.

4. Conclusions

What is difficult to analyze in the management system of an educational institution refers to the multitude of factors, functions, components, and management structures that must be considered in the analysis, defining elements for the proper functioning of the system. To achieve a profile of the educational unit, its overall performance must be seen as a function of the correlation between its organizational capabilities, the overall motivation of the institution, and the external environment. Besides, the functioning of the organization must be considered, as a factor in achieving the productivity of its members. The quantity and quality of the analysis performed are decisive for the accomplishment of the institution's mission. The best way to ensure quality is systematic, ongoing attention to improving it and including quality in an organized quality assurance system.

The multiple changes, the deficiencies in the management of change in education, and the inability of educational actors and stakeholders to adapt, even more, to accept these changes, as well as to want change in the context of better-quality management have generated problems. from educational management. The implementation of the quality management system in pre-university secondary education and not only, in Romania is an objective condition and necessity, to ensure compatibility with the trends of pre-university secondary education and not only in European developed countries. This creates the basis for cooperation, collaboration, and compatibility of knowledge in the field of science education and research.

Quality and performance evaluation must be analyzed in parallel with the implementation of evaluation methods, to increase institutional autonomy, but also highlighting responsibilities. The introduction of systematic evaluation, with the main reason for better use of resources, makes the objectives set in the strategic management policy be achieved effectively.

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THE DYNAMICS OF THE ACCOUNTING MODELS AND THEIR IMPACT UPON THE FINANCIAL RISK EVALUATION

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Abstract: *All the companies are exposed to risks and circumstances can take an unexpected turn at some point in time. What the company can control is how these risks are managed and firstly the steps to be taken to avoid them. The way how the scientific expertise, data and the advice on devising the risk strategies are understood, represented and incorporated into a structured system has visibly evolved since the 19th century until present, along with the accounting models and the main factors that triggered a higher concern in this sector.*

Keywords: *accounting model, evaluation, financial risk, accounting information, financial risk reporting, corporatist governance, risk management.*
JEL Classification: *M41.*

1. Introduction

The successful companies use the information technology in order to change the role of the accounting, from 'counting' into a trustworthy partner for the business. A part of this transformation comes from the latest technologies in use. The most part has to do with the changes in the strategies of the companies. The financial departments are no longer and solely interested in figures, but they concentrate now on the **analysis of the information**.

The information technology has allowed the profession of accountant to focus on the strategic issues hiding behind the data. Hence, this profession has been restructured and promotes a change in how the companies can evaluate their business prospects. High technology is vital but not the only ingredient in this recipe for success. Another important element is the shift in the organizational culture and the need that the accounting and reporting system of the company to reflect an advanced business model. This type of governance requires estimations in due time and assessments regarding the assets, liabilities, income and expenses, as well as the exposure of the assets and of the liabilities in a more exact and analytical manner than before. The management of the leading companies in their activity sector has decided to have a future-oriented strategy rather than to the past and want the accounting professionals do the same. And this thing happens as the research prior the emergence of the problems is a key factor in business (Chorafas, 2008, p. 26) should we look at risks, costs, sales or any other major element in the business.

All the companies are exposed to risks and circumstances take an unexpected turn at some point in time. What the company can control is how these risks are managed and firstly the steps to be taken to avoid them. A dysfunctional culture, the failure of the management and the behavior of certain individuals are the main reasons of an ineffective company running. Very often, such failure comes from the lack of awareness about the risks and their potential significance and from difficulties when avoiding and managing the risks (The Association of Chartered Certified Accountants, 2012). Prior to 1970, the risk management in most companies used to be broadly defined by the acquisition of insurance – a partial strategy of risk management. The risk management was also rudimentary in the financial sector. The banking regulatory authorities did not have instruments to be applied on a large scale for measuring the risks in the system, thus making difficult a constructive intervention. The banks were missing the instruments of modeling the interest rate risk for their portfolios of credits, useful to protect themselves from their change. They also did not

have instruments to quantify and manage the credit risk as they only would understand the elementary notions of the operational risk (Buehler, Freeman and Hulme, 2008, p. 4).

The way how the scientific expertise, data and the advice on devising the risk strategies are understood, represented and incorporated into a structured system has visibly evolved since the 19th century until present. More reforms regarding the methods to evaluate and manage the risks have been established (Millstone, 2010, p. 1).

2. The Accounting Model – Financial Risk Binomial in a Historic Perspective

As in any branch of history, the building and the understanding of the accounting models dynamics cannot be grasped without a constant reference to the general evolution of the society. The field of accounting is, of all the historic research issues, the one that has the closest connections with the political state, the economic situation, social organization, as well as with the cultural level of the country and the time the reference is being made to. Along the centuries, a constant relation has been noticed between the accounting development and the circumstances and the needs of a changing society (Tremblay, Cormier and Magnan, 1994, p. 1). Similar to the accounting, the perception of risk and the financial risk has been changed along the line by the society needs and the degree of economy development.

The connection between the two concepts is obvious, firstly, from the objectives that these have within the organizations. Even though the accounting objectives differ as a function of the company activity object and the accounting model being adopted, there are punctual objectives that need to be followed up on. Thus, this is about the recording, classification and presentation of the data and information concerning the financial activity. The financial risk management represents the process to be able to face the ambiguities of a financial nature that may arise, aiming to develop certain strategies correlated with the priorities and policies of a company for lowering, transfering or elimination of the financial risks.

From the very beginning, both concepts can be noticed to refer to the financial activity of the company, where the accounting information is the bridge between the accounting model and the evaluation of the financial risks, the drive and the key factor of the success in business, more exactly reaching the objectives (fig. 1).

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Fig.1. The accounting model - financial risk connection

Source: personal adaptation

The Table 1 shows the stages and the highlights in the evolution of the **accounting models**, in parallel with the methods of risk evaluation for the same historic periods.

Table 1. The parallel development of the accounting models and the methods of risk evaluation

Dates	Features of the accounting model	Features of the methods of risk evaluation / financial risk
Ancient times	Registering the facts and happenings via the slitter on the cave walls, animal bones, silver plates, papyrus. Recordings in the chronological order, with no correspondence between elements.	There is no proof to measure the risk in the ancient times, except for the writings in the Egyptian crypts of gambling and betting.
Middle Ages	Private property, trade, writing, money and arithmetic are main factors that led to the development of accounting in a double entry (1494).	The emergence of the Arabic counting allowed the introduction of the scientific basis for betting.
Middle Ages – The industrial revolution	The factors: the development of the large capitalist companies, the industrial revolution and the increase of the volume of transactions brought on the emergence of certain combinations of closing balances and of a system of internal control.	New statistical concepts will emerge – the standard deviation and normal distribution. T. Bayes demonstrates the usefulness of the old and new information in the decision-making process. The emergence of the credits led to the development of the solvability analysis by which the banks had the guarantee of their reimbursement.
The Industrial Revolution – Mid 20th century	The highlights are represented by the two world wars and the great economic depression. There will be concerns about building a chart of accounts and improvement of the financial communication. The shareholders will request for financial statements and reports that will include the derived results. The first accounting theories and generally accepted principles emerge (USA). The accounting will be given new functions, of control, decision and forecasting.	The first risk theories emerge. In the economy and finance, there will be analytical economy, compensating variation and the theory of games, of the dynamic systems in the theory of decision. In the same sector of the bank credits, the notion of liquidity has been come up with, by the development of the liquidity rates and of the trading capital.

End of 20th century	The outlining of certain different accounting models, in dependence on historic, cultural and social factors. The first discussions related to normalization, standardization and the accounting harmonization are initiated.	The period of the great evolutions in the risk evaluation methods. There will be initiated vital methods for the companies, such as the Black-Scholes formula, MonteCarlo simulation, the value at risk, RAROC, the methods RiskMetrics and CreditMetrics, etc. The orientation towards the implementation of certain methods depends on the features of the accounting model in use.
The 21st century	The accounting normalization – with the purpose to build uniform accounting practices and the implementation of certain identical accounting norms.	Underlining the importance of the risk management process via the IFRS requirements.

Source: personal adaptation

The table mentioned above helps us draw the conclusion that, for a long time, the risk management and the evaluation methods have been one step behind the development process of the accounting. The approach and concern that the risk evaluation process had towards the end of the 20th century were the result of certain combinations of internal and external factors. The modern risk management started after 1955 and until the 70's, it witnessed a huge rise – during that time, this concept went through a genuine revolution in the financial sector (Dionne, 2013, pp. 3-6).

While examining the table, it can be noticed that the development of accounting and of the risk evaluation methods took place in times quite close, namely 1494 and 1654. The emergence of the accounting in a double entry was followed by a time of growth, when the volume of transactions surged and so did the number of the capitalist companies. This lucrative period in economy resulted in a higher interest in risk evaluation, the development of the statistical methods and it had an impact upon the decision-making process, also due to the emergence of credits.

Since T. Bayes wanted to observe how causes interfere with the effects, he performed certain experiments and reached to the conclusion that the existent data, plus new probabilities of the observations, take to results that are closer to the reality. This statement is a major part of the risk management process and the forecasting their impact is a particular stage.

The attention paid to this process is visible in the publication of magazines of literature in review, followed by the emeregence of the risk-related theories. The implementation of the evaluation methods of the financial risk relies on the information derived from accounting and the improvement of the financial communication and the devising of the reports useful for the shareholders to find out the results is a foundation for the risk analysis.

The studies aiming the history of accounting render the fact that the accounting models have also known various periods of development. To make a parallel between France and United Kingdom, we notice that the profession of accountant was acknowledged as an independent profession in 1943, while in England this recognition took place at the end of the 19th century.

During the first part of the 20th century, France slowly shifted from a predominantly agricultural economy to an industrial economy, with gigantic corporations. Back then, the main interest points were the financial accounting and the basic principles of record-keeping. A modest success was achieved in the implementation of the accounting techniques related to costs and management control. The major efforts were steered towards the accounts and the chart of accounts during the last decade of that time window. This research area has always fascinated the theoreticians, researchers and scholars (Mattessich, 2008, p. 124). That interval was not memorable for the French accounting but it was the time when the accounting model took a certain shape. The English speaking countries witnessed a higher development during that time. Thus, the Wharton School of Finance and Economy had already been established and more business schools were about to open in the USA; in Great Britain, the School of Economics and Political Science in London has started teaching since 1895. These schools helped a great deal with a faster development of the accounting.

Prior to the 1929 economic downfall, which led to an attitude change over against the risk, the profession of banker/financier consisted in providing the transfer between the accounts. The initiation of the exploitation credits resulted into an awareness related to the credit risk, closely connected to the solvability of the company. The balance is the one that allows stressing upon two judgment points concerning the decision in credits assistance: the security interests granted and the financial statements of the debtor (Vernimmen, 2013, p. 332). Hence, it will be necessary to focus more on the financial structure of the company. For a long time, the bankers were satisfied with the solvability criteria but they became aware of the importance held by the liquidity degree and by the concept of working capital. The financial risks thus gained in their significance, along with the development of the credits and investments. In the second half of the 20th century, a new academic spirit comes to life. R. Mattessich points to the relevance of the notions of statistics and of the analytical methods applied in accounting, particularly in audit. Such notions are also the foundation of the risk management, so that they can be looked at as another factor that has impacted both concepts, namely the accounting model and the evaluation of the financial risks.

3. Accounting Models for the Non-Quoted Companies and the Interest in Evaluating the Financial Risks

The different valencies acquired by the accounting in double entry, along with the factors that have acted upon in time have resulted in different accounting models, depending on the degree of capitalization and culture of the countries. The most recognized accounting models are the continental and the Anglo-Saxon ones.

The Anglo-Saxon accounting model is defined by a strong capitalization, focusing on the needs of investors and is essentially run by the capital markets. The continental model relies on macro-economy, as being under the influence of the taxation system and of the government. The accounting objectives vary as a function of the accounting model, as such:

Table 2. The differences of the accounting objectives, according to the accounting model

Objectives of the accounting	The continental accounting model	The Anglo-Saxon accounting model
The accounting information in the decision-making process		
- The main users **- The accounting principles** **- The purpose of the accounting strategies**	Creditors, fiscal authorities, investors dominate the principles of prudence and the influence of taxation method on the financial accounting More options for acknowledgment and evaluation	Firstly, the investors True and fair view Not too many alternatives for acknowledgment and evaluation
The calculation of the sharable income		
	The prudent calculation of income, by using the conservatorism principle, the limitation of the income distribution, the trend of increasing reserves	The income calculation is part of the utility of decisions, relies on the true and fair view, there is no limitation of the income distribution, the accrual principle is dominant
The tax basis		
	A mutual influence between the taxation and financial accounting	There is no reciprocity between the fiscal system and the financial accounting

Source: adaptation after M.Galum, U.Mandler, „Global Accounting Harmonization from a German Perspective: Bridging the GAAP," Journal of International Financial Management & Accounting, Vol.7, no.3, 1996, p.28.

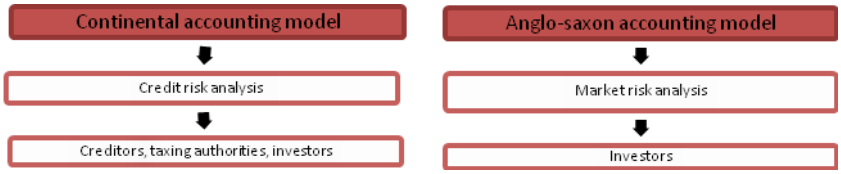
As already mentioned above, the risk management is in a close connection with the objectives of the accounting. Hence, the conclusion is that every group of companies that applies the accounting models in the previous table handles the risk management in a different way.

From a historic perspective, the accounting regulations have patterned themselves upon the cultural differences in other management areas, the Anglo-Saxon and the European continental ones. Similar with other areas, such cultural distinctions even out, due to the consequences of the financial markets globalization and to the attempts of making these markets more efficient. In fact, a separate division between culture and the accounting needs of the small and medium companies (SMEs) and the multinationals comes to the first plan. While the regulations in the Great Britain mainly targeted the large companies and the SMEs had to adjust these regulations in dependence on their needs, the traditional system in the Continental Europe aimed at the small and medium companies and so the multinationals had to adjust to it. Such inefficiencies have resulted into a disorganized and expensive accounting for the Anglo-Saxon SMEs and the European multinationals, which have surely paid too much for financing.

The destination of the accounting information and the main users play a significant role in the risk management process. The disposition of the companies to adopt a continental accounting model to manage the credit risk is logical, as its financing mainly comes from bank credits. Due to the exposure on the financial markets and also to the

requirements of the investors, the companies that embrace the Anglo-Saxon model have prioritized the market risk analysis (fig.2).

Fig.2. Types of risks targeted by different accounting models for the non-quoted companies



Source: personal adaptation

Even though these risks are approached by each company in itself, we have noticed, post-research, that the methods of evaluation and analysis in use for the financial risks are the same. The structure of the financial reporting varies – the continental model provides more detailed information, including an analysis of the company activity during the year and its future goals. Such additional reporting facilitates the building of an analysis frame for the risks.

In England, in 1998, the Institute of Chartered Accountants in England and Wales (ICAEW) recommended that the financial report to incorporate statements of the risks affecting the business good performance (Linsey and Shrives, 2000, pp. 115-118). The risks reporting was not a premiere, as the Accounting Standard Board (ASB) had suggested in 1993 that the quoted companies present their main risks and uncertainties, along with comments related to their management and, for the quality sake, the nature and the possible impact upon the result. There was no particular format for these statements, and the companies construed this requirement at their discretion.

Going back to the ICAEW's recommendation, introduced in "Financial reporting and risk – suggestions for statements on business risk," it also meant the quoted companies. There have talks about its implementation by the SMEs, thanks to the importance of risk awareness, but it was decided that it would apply to only the quoted ones for the beginning. The recommendation said that the companies should voluntarily report information concerning the business risks that could be of a real help for the investors and the companies. The main reason for this type of reporting was that the companies had no choice and performed in a world where the risk is present – hence, the exposure to the risk has to be lowered to a minimum and the opportunities for potential profit to be maximized (Linsey and Shrives, 2000, p. 118).

The discussions of the Financial Reporting Council (FRC) in United Kingdom with the companies, investors and consultants in 2011 (Financial Reporting Council, 2011) pointed out that they thought it was enough room for improvement regarding the risk reporting and the internal control.

Among the upgrades that are possible, there are the including of risk-related comments in the entire reporting and not only in a single section, building a connection between the risk reporting and the discussions referrring to strategy and the business model, explanation of the changes occurred while exposing to risk during the 12 precedent months as a response to the modifications in strategy or in the economic environment and, if possible, references to the future changes. Likewise, it was highly necessary to present the method that helped the key risks be reduced.

Upon examining the standards in the financial reporting issued by FRC in March 2013 (Financial Reporting Council, 2013), it can be noticed that a part of the upgrades

have already been implemented – hence, for each reporting item, there will be identified the requirement to indicate the impact on certain risks (credit, market, liquidity).

In terms of risk reporting in USA, FASB issued FAS133 in June 1998. This is a document concerning the accounting of the financial instruments and the insurance activities, which mentioned the necessity to present information on the financial risks.

According to a SEC report in 2011 (Secutity and Exchange Commission, 2011) about the differences and similarities between US GAAP and IFRS in how they handle risks and uncertainties, with the purpose of their merging, it is stated that US GAAP includes certain risk-related requirements that are missing at IFRS. For instance, US GAAP requires the presentation of certain concentrations of factors that can turn the company vulnerable to the risk of a severe short-term impact or discussions pertinent to the estimations alreade made whether they can significantly change in the following year.

Starting with 2012 (Financial Accounting Standards Board, 2012), FASB affirms that there have been upgrades regarding the provision of more detailed and pertinent information on the exposure of the companies to the liquidity risk and to the interest rate risk.

For the companies in France, risk reporting falls into two categories; the large companies implementing IFRS and reporting accordingly and the individual companies subjected to the national regulations. The stipulations of the French legislation, in compliance with the European directives, underlines the necessity of risk reporting in the report compiled by the managers, which has to include the presentation of the main risks and uncertainties, as well as the exposure to the market risks, of the market, the liquidity and the cash flows. This applies for the companies that fulfill certain size criteria, while the small companies are exempt from such stipulations.

In Romania, the legislative document that regulates the reporting process of the companies is OMFP 3055/2009, along with further amendments. Upon reading this document, a special importance is noticed to be assigned to the risk reporting process. The document in which the risks and their management are presented to the interested parties is called "The Manager's Report."

This is a document devised for each fiscal year of the Administration Council of the company and needs to include a true presentation of the development and performance in the company's activities, of the financial position and also a description of the main risks and uncertainties. Besides other information, it has to contain the goals and strategies of the company pertaining to the financial risk management, the all-risks coverage policy for each major type of transaction that uses the risk coverage accounting, and the exposure to certain types of financial risks (market risk, credit risk, liquidity risk and the cash flow risk). Their reporting is mandatory for the companies that compile the Manager's Report. The companies that do not fulfill the criteria of a certain size are not required to report the exposure to the financial risks.

According to this regulation, the market risk comprises of the currency risk, the interest rate risk at fair value, the price risk and it refers to the possibility of a profit following the exposure to it.

It can be noticed that the risk evaluation relevance is gaining ground and this reflects in the requests of the regulations criteria. Table 3 shows the criteria of the regulations, as introduced above, for an overview upon this issue.

Table 3. Requirements for the reporting of the financial risks, depending on the current regulations applying to the unrated companies that do not employ IFRS

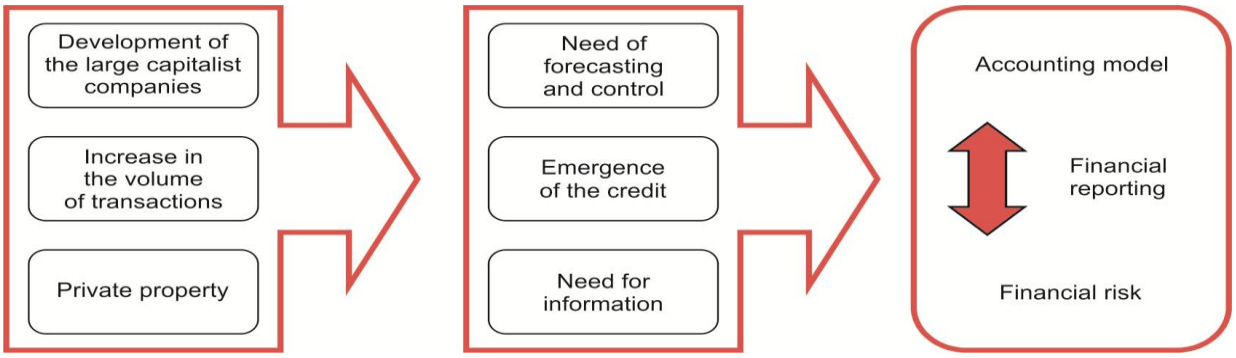
	Country	Requirements pertinent to the financial risks
Anglo-Saxon accounting model	UK	**The standards of financial reporting for UK and Ireland** Comments regarding the market risks, of credit and liquidity along the financial reports and not in only one section.
	USA	**US GAAP** Requirements concerning the liquidity risk and the interest rate risk.
Continental accounting model	France	**The General Chart of Accounts, the Commercial Code** The main risks and uncertainties challenging the company Exposure to the market risks, credit risks, liquidity risks and of the cash flow.
	Romania	**OMFP 1802/2014** Goals and strategies related to managing the financial risks Risks coverage policy Exposure to certain types of financial risk: Market risk Credit risk Liquidity risk Cash flow risk

Source: personal adaptation

4. Conclusions

The background of the concepts and the analysis of the factors underlining their development have revealed a connection between the accounting models and the evaluation of the financial risks. The factors influencing both concepts can be resumed as presented in the diagram below:

Fig. 4. The impact upon the accounting models and the methods of financial risks



Source: personal adaptation

The research herein has proved that the dynamics of the society and its needs have the most notable impact upon the development of accounting, and the methods of evaluating the financial risks have been a step behind it for a long period of time. Once the financial markets have been globalized, the demands of the investors have resulted into a genuine revolution of the "financial risk" concept and the importance of the risk management have gained new valencies.

In the 21st century, the "uncertainty" and the associated concepts dominate the scientific perspectives. The shift from a determinist view to stochastic notions is no longer considered a singular case, but a part of a general trend, which includes our vision on the modern world. We live in a stochastic universe, and thinking from the probability perspective seems to be the "best bet" (Mattessich, 2008, p. 322).

The future of the accounting models can be looked at in terms of information, and its perspective is a true paradigm. The need for information is higher than ever and this is the path to success, either in the results included in the financial statements of the companies or information that is useful to the calculation of the financial exposures.

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APPLICATION OF INTERNATIONAL FINANCIAL REPORTING STANDARDS. EQUITY CONSIDERATIONS

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Abstract: *The analysis of equity information submitted by entities in the annual financial statements allows information users to assess the objectives and policies adopted by entities on capital management. Equity information is presented in the Statement of Financial Position, the Statement of Change in Equity and the notes accompanying the financial statements. While matters relating to the recognition, valuation and presentation of assets and liabilities in annual financial statements are subject to specific accounting standards, equity issues are not subject to a specific standard, which are dealt with in the General Conceptual Framework and in some accounting standards. The General Conceptual Framework defined the concept of capital and the maintenance of financial capital, and in IAS 32"Financial instruments: presentation", IAS 29"Financial reporting in hyperinflationary economies", IAS 1"Presentation of financial statements" and other standards are prescribed criteria for the recognition, valuation and presentation of equity items. Some equity items such as equity and repurchased reserves, own shares are subject to national legal regulations. Information on the existence of reserves recognised under the legal provisions or restrictions on the distribution of equity items to owners is of interest to users. After Romania's accession to the EU, there was an extensive process of modernisation of legislation covering both company law and accounting rules in terms of eliminating any legal provisions that would have limited the functioning of companies in a competitive environment. Entities whose securities are traded on a regulated market and some entities with full or majority state capital apply the International Financial Reporting Standards as an accounting basis. With some exceptions, the transition of these entities to International Financial Reporting Standards has not significantly affected the total equity highlighted under accounting rules in line with European directives. The main changes in the equity structure were determined by the adjustment to inflation according to IAS 29"Financial reporting in hyperinflationary economies" and adjustments made as a result of the first application of the International Financial Reporting Standards. The interpretation of the equity information presented in the financial statements should be carried out in the context of the provisions of the relevant accounting standards and national legislation.*

Keywords: *equity, financial concept of capital, reserves, equity adjustments, compound financial instruments.*

JEL Clasification: *M41.*

1. Equity information and its users

To make decisions on how to invest resources, existing and potential investors need both information that confirms or alters the results of previous assessments/estimates and predictive financial information that can be used for future actions.

Users of the information in the annual financial statements are investors, banking institutions and other financial entities providing borrowed resources, other creditors, entity staff, state institutions and other entities that may be customers or suppliers. Information provided by legal entities of public interest defined under the Accounting Act (art. 34 para. (2) of the Accounting Law no. 82/1991, republished, as subsequently amended and supplemented) is of interest to users of information due to the significant volume of assets and liabilities managed, the number of employees and the areas in which they operate.

The General Conceptual Framework states that various users "need information on the entity's resources, entity claims and other information on how efficiently and effectively the board of directors and management of the entity have fulfilled their responsibilities for the use of the entity's resources" (General Conceptual Framework OB 4). Among those responsibilities is that relating to the assurance of "certainty that the entity complies with applicable laws, regulations and contractual provisions" 9 General Conceptual Framework OB 4).

Information users shall have at their disposal periodic financial reports (interim financial reports) the minimum content of which is provided for by IAS 34 and the annual financial statements published in accordance with IAS 1.

2. Items presented in the Statement of Financial Position

Entities shall provide information on assets, liabilities and equity in the Statement of Financial Position in an intelligible manner and maintain their presentation from one period to the next.

Assets are resources from which entities expect to obtain economic benefits in various forms (income, earnings, cost reductions or other non-quantifiable cash benefits).

Debts are current obligations of entities (at the time of the financial statements) whose settlement will generate outflow of resources, either in the form of cash or in the form of other assets.

The presentation of assets and liabilities shall be carried out structured, either according to their liquidity (usually in the case of financial institutions) or according to their classification as fixed/current assets, i.e. short- or long-term liabilities.

Information on assets and liabilities enable users to „identify the strengths and financial vulnerabilities of reporting entities" (General Conceptual Framework ob. 13), assess their liquidity and solvency and identify potential resource requirements.

As defined in the General Conceptual Framework, equity is „residual interest in an entity's assets after deduction of all its liabilities" (General Conceptual Framework para. 4.4 lit. c). Equity information is usually presented in a synthetic manner in the Statement of Financial Position, other information being presented in the Statement of Change in Equity and in the notes to the financial statements.

Recognition and evaluation of the items presented in the annual financial statements shall be carried out in accordance with accounting policies in accordance with the relevant accounting standards and, failing that, in accordance with the professional reasoning exercised by using the documentation sources provided for in IAS 8 (IAS 8 para.11).

Recognition, valuation and presentation of different assets, in kind in the Statement of Financial Position shall be carried out in accordance with the relevant accounting standards, of which IAS 16, IAS 38, IFRS 16, IAS 2.

For their part, the aspects relating to the recognition, classification and presentation of liabilities in the Statement of Financial Position are treated in specific accounting standards, such as i.e. IAS 19, IAS 37, IAS 12, IFRS 9.

Unlike assets and liabilities, equity items are not subject to a specific accounting standard, with provisions relating to their valuation and presentation being contained in both the General Conceptual Framework and some accounting standards (e.g. IAS 1, IAS 29, IAS 32). Some equity items show the result of the entity's activity (profit or loss), while other items are the result of transactions carried out by entities in different situations such as, for example, retroactive reprocessing of accounting policies or correction of errors under IAS 8.

Since equity or net assets represent the difference between the value of the assets and liabilities of entities, the valuation bases adopted by the entities to assess these items may influence both the value and structure of the equity items presented in the Statement of Financial Position. In this respect we mention some of the evaluation bases that can be used by entities:

- cost valuation or revaluation of tangible assets in accordance with IAS 16;
- cost valuation or fair value valuation by profit and loss account of real estate investments in accordance with IAS 40;
- valuation at amortized cost, by other comprehensive income or by profit and loss

account of financial assets under IFRS 9.

3. Presentation of equity items in Statement of Financial Position

IAS 1 states that „an entity shall present separately each significant class of similar elements" (IAS 1 par 29). Items which are different in nature or function must be presented differently, unless they are insignificant.

Equity may be presented in the Structured Financial Position Statement, according to various criteria, such as the origin of resources (shareholder contributions), the result of the period and the result carried forward, the revaluation reserves and other reserves.

The holding of reserves serves both the purpose of capital adjustment and the role of protecting an entity's creditors from potential losses. The companies Act (Company Law No 31/1990, republished, as amended and supplemented) requires entities to take part in the net profit for the purpose of constituting a reserve which can only be used by the entity under the conditions laid down by law.

With regard to the recognition of reserves, the General Conceptual Framework States that transfers to reserves „are allocations of retained earnings rather than expenses" (General Conceptual Framework 4.21).

Specific to the Romanian economy is that the legislation regulating some strategically important activities, such as the transport of electricity, in previous periods, natural gas and oil have included explicit provisions for the establishment of reserves for the development of transport infrastructure by highlighting them on account of expenditure accounts. By this way of highlighting the reserves, the state institutions sought to build up resources for infrastructure development and to reduce the tax base for entities active in the fields mentioned. In other cases, entities benefited from different tax concessions under the conditions laid down by the law, for example investing the profit in the acquisition of fixed assets or building new production capacity in some economically less developed areas.

The existence of reserves recognized under specific regulations (laws, government decisions) or capital items whose distribution to owners is restricted is relevant information to be disclosed in the notes to the annual financial statements.

At the same time, the existence of different rights of shareholders to receive dividends or to repay equity is essential elements in the decision-making process of potential investors.

4. The concept of capital and capital retention

Within the General Conceptual Framework, two concepts of capital are presented, namely the financial concept and the physical concept. The financial concept of capital is that adopted by entities when preparing and presenting annual financial statements and according to it „capital is synonymous with the entity's net assets or equity" (General Conceptual Framework 4.57).

The physical concept of capital may be the basis for the preparation of financial statements where users of information are concerned about maintaining an entity's production capacity, with the statement that „certain difficulties in assessing and implementing the concept may arise" (General Conceptual Framework 4.58).

The concept of maintaining financial capital in turn generates the concept of maintaining financial capital (General Conceptual Framework 4.59 lit a), according to which there is a close link between capital and how an entity's profit is defined. Profit can be defined as "the residual value remaining after expenses (including capital maintenance adjustments, where applicable) have been deducted from income" (General Conceptual Framework 4.60). According to the concept of capital maintenance, "profit is obtained only if the financial (or monetary) value of the net assets at the end of the period is greater than

the financial (or monetary) value of the net assets at the beginning of the period" (General Conceptual Framework 4.59 lit a). Therefore, an entity is considered to have made a profit (return on capital) if the inflows of assets in a financial year were in excess of those required to maintain it.

Company law contains a provision that can be associated with the concept of capital maintenance. Thus, at art. 69 stipulates that "if there is a loss of net assets, the subscribed share capital will have to be replenished or reduced before any distribution or distribution of profit can be made". The mentioned law does not provide additional clarifications but, for the proper understanding and application, its provisions must be corroborated with the accounting norms applicable to the entities and with other legal provisions. Typically, an entity that reports a loss of net assets also reports a loss in the income statement. However, there are situations in which an entity reports an accounting profit in the event of a reduction in net assets. Such situations may arise as a result of operations which, although of an expenditure nature, are highlighted on account of reserves or other elements of the overall result. These operations include:

• highlighting the reduction in the value of property, plant and equipment on account of the revaluation reserve account;

• highlighting the reduction in the value of financial assets due to other elements of the overall result, such as the carried forward result or the valuation reserve at fair value (account 1038 "Differences in changing the fair value of financial assets available for sale and other equity items" OMFP No. 2844/2016);

• retroactive restatement of errors related to previous periods due to the carried forward result.

As a rule, the reduction in the value of some assets is recognized in the profit and loss account. However, according to the accounting policies adopted, discounts can be treated as an adjustment for capital retention and are not included in the profit and loss account according to relevant standards (IAS 16, IFRS 9, IAS 8).,

5. Recognition of equity items

In the accounting of the entities, the elements of own capitals can be represented by the share capital, consisting in the contribution of the owners the reserves provided by law, the revaluation reserves, other reserves, capital premiums, profit and the carried forward result. Unlike the assets and liabilities whose management is the attribute of the management of the entity, in the case of equity elements the legal component is essential, the decisions regarding these elements being left to the capital holders.

In Romania, the issues related to the share capital, the legal reserve, the revaluation reserve and other reserves constituted by companies, the redemption of own shares and other capital operations are regulated by Law no. 31/1990 on companies.

Regarding the recognition and measurement of equity elements in accounting, we can appreciate that due to legal and accounting regulations this process is standardized and does not present practical difficulties. However, there may be rare cases in which the staff of entities must exercise professional judgment in order to assess the extent to which a contract or financial instrument may generate an item of debt and / or an item of equity. For such cases, IAS 32 sets out "principles for presenting financial instruments as debt or equity and for offsetting financial assets and financial liabilities".

With respect to the classification of a financial instrument, IAS 32 requires that a financial instrument that creates a financial liability for the entity and at the same time entitles the holder of the instrument to convert it into an equity instrument must be classified on its components. Such financial instruments should be classified, at initial recognition, "as a financial liability, financial asset or equity instrument, in accordance

with the contractual commitment fund and the definitions of the financial liability, financial asset and equity instrument" (IAS 32 para 15). For example, a loan agreement that entitles the creditor to convert its receivable into a fixed number of ordinary shares of the borrowed entity is a compound financial instrument. For the borrowing entity, the contract includes both a financial debt component and a loan-to-equity conversion instrument.

Other provisions of IAS 32 that are covered by IFRS-compliant accounting regulations and in the accounting regulations compliant with the European directives issued by the Ministry of Finance refer to the presentation in the annual financial statements of the repurchased equity instruments.

Entities may repurchase their own equity instruments under certain conditions provided by the Companies Law. IAS 32 provides that repurchased equity instruments "shall be deducted from equity" (IAS 32 para 33) in the statement of financial position. At the same time, the results of operations (gains or losses) determined by the purchase, sale or cancellation of repurchased treasury shares as well as the equivalent value received or paid for them are recognized directly in equity.

Depending on the nature of the assets and accounting policies adopted, entities may disclose in the Statement of Financial Position and other items of equity, for example in accordance with IFRS 2 and IFRS 9. In accordance with IFRS 2, in the case of goods or services acquired in a transaction with share-based payment, the entity "shall recognize an appropriate increase in equity if the goods or services have been received in a share-based payment transaction settled in equity instruments, or a liability if the goods or services have were acquired in a cash-settled share-based payment transaction" (IAS 2 para 7). To highlight the elements of equity according to IFRS 2, in the Chart of Accounts approved by the accounting regulations approved by O.M.F.P. no. 2844/2016 provides for account 1038 "Other equity elements" / analytically distinct.

According to IFRS 9, depending on the business model and cash flows generated by assets under management, entities may adopt as an accounting policy the classification of financial assets as subsequently measured at either amortized cost or fair value through other comprehensive income or fair by profit and loss.

To highlight the differences resulting from the valuation of financial assets through other elements of the overall result, in the chart of accounts approved by the O.M.F.P. no. 2844/2016 provides for account 1035 "Differences from the change in the fair value of financial assets valued at fair value through other elements of the overall result".

6. Equity adjustments due to the transition to IFRS

The application of IFRS as an accounting basis was made based on legal provisions issued by the Ministry of Finance, the National Bank of Romania and the Financial Supervisory Authority.

Economic operators have made the transition to IFRS in two stages, as follows:

• the entities whose securities were traded on December 31, 2012 on a regulated market have prepared the financial statements in accordance with IFRS starting with this date;

• other entities with full or majority state capital have applied IFRS starting with the financial year 2018, given that they have applied extra-accounting IFRS for the financial years 2016 and 2017.

Depending on the structure of the assets, liabilities and equity existing in their accounting, the entities made the adjustments required by IFRS at the transition date.

In order to highlight the changes in the value and structure of equity caused by the transition from accounting regulations in accordance with European directives to

accounting regulations in accordance with IFRS, the information presented in the first financial statements published by entities required by law to apply these standards was analyzed.

The database used in the analysis was represented by the annual financial statements published by these categories of entities on their websites (the annual financial statements published by 30 entities whose securities were traded on a regulated market and the annual financial statements published by 13 entities with full or majority state capital).

The research aimed to highlight how the transition to the application of IFRS by the categories of entities mentioned affected the elements of assets, liabilities and equity highlighted in their accounting according to the accounting regulations compliant with European directives.

Regarding the assets of the entities, the conclusions of this study were published in Contemporary Economy Journal, Vol. 2, Nr. 3/2017.

Unlike the presentation of equity elements provided by the accounting regulations compliant with European directives (Minister of Finance no. 3055 / 2009) where each item of a different nature is presented separately, in a predetermined format, the presentation according to IFRS is usually condensed by combining the different elements of equity. In these conditions, it was difficult to perform a comparative analysis between the values of the different equity elements presented according to the two accounting regulations.

The analysis of the information presented by the entities that were the subject of the study highlighted the following aspects:

a) the entities adjusted their share capital and reserves to inflation according to IAS 29. Whereas a large part of the analyzed entities were legally constituted in periods prior to 2003 (until which the Romanian economy faced a hyperinflationary process), it was necessary to update the equity elements to inflation.

The result of the inflation update was recognized in a separate carry-forward account provided for in the accounting regulations (account 118 "Deferred income from the first-time adoption of IAS 29"). This inflation adjustment operation of equity items (non-monetary) did not affect the total value of equity presented in the annual financial statements, but only their structure. As a result of the inflation adjustment, a legal share capital plus an adjustment to inflation and a negative carry-forward result of equal value to the adjustment of the share capital are presented in the own capitals.

b) the revaluation reserve has, in some cases, been reclassified according to the accounting policies adopted by the entities.

IFRS 1 allows entities to make use of exceptions and exceptions to the provisions of certain standards when they first apply IFRS. Thus, some entities (for example OMV Petrom SA, Rompetrol Rafinare SA, Compania Națională de Transport de Energiei Electrice Transelectrica SA) have adopted as an accounting policy the valuation at fixed cost of fixed assets when switching to IFRS and have abandoned the revaluation policy of them. The adoption of this accounting policy resulted in the modification of the equity structure in the sense of derecognition of the revaluation reserve at the same time as the recognition of a positive deferred result.

c) the application of IFRS for the first time involved the recognition of assets and liabilities that met the criteria set out in the accounting standards and the derecognition of other items. Due to the highlighting in the equity accounts of some reserves for which the tax legislation provides for taxation under certain conditions, there were frequent situations in which the entities recognized deferred tax related to these reserves on account of a separate account (account 1034 "Current income tax and income tax deferred profit recognized on account of equity ").

Among the items that were subject to derecognition at the transition to IFRS are the tax provisions recognized in accordance with the accounting regulations compliant with European directives.

d) IFRS 1 requires that adjustments made to the transition to IFRS are generally accounted for in the retained earnings. As a result of recognizing liabilities or adjustments to the value of assets, some entities recorded a negative carry-forward result, which meant a reduction in equity.

The research showed that although there were changes in the structure of equity, the general trend was to maintain their value according to IFRS compared to the values highlighted according to accounting regulations compliant with European directives. Thus, most entities presented variants of the value of equity less than 10% (example Biofarm SA, Oil Terminal SA, Zentiva SA, Aerostar SA, National Electricity Transmission Company Transelectrica SA, Romatsa SA, National Salt Company "SALROM" SA). Other entities showed significant reductions or increases in equity according to IFRS, for example the Romanian National Post Company registered a reduction of 32% while the Autonomous Administration "Romanian Auto Registry" showed an increase of 19%.Un element de analiză care oferă informații relevante pentru utilizatori este reprezentat de „rezultatul reportat".

The carried forward result derives from transactions, different in nature, that the entities carry out so that in case of significant values the synthetic information presented in the Statement of financial position must be detailed in the notes to the annual financial statements.

Among the operations leading to the recognition of a deferred result are:

- the recording of retained / unrecovered profit or loss in previous financial years;
- the correction of errors related to previous financial years or the retroactive modification of accounting policies;
- highlighting the results of the restatement performed at the transition to IFRS (highlighting some adjustments to the value of assets, provisions);
- highlighting the carried forward result representing the revaluation surplus realized, according to IAS 16;
- highlighting the result carried forward when applying IFRS for the first time following the adoption of fair value as an assumed cost.

IFRS-compliant accounting regulations provide for grade II synthetic accounts to record each transaction in the carried-forward income statement, depending on its nature.

7. Conclusions

According to IAS 1, entities must disclose in their annual financial statements information about their assets, liabilities and capital so that users of the information can appreciate how they have been managed.

Entities use the financial concept of capital in preparing their annual financial statements and according to this concept, capital is synonymous with net assets or equity.

The use of different valuation bases for assets and liabilities can influence both the value of equity and the structure of the items presented in the annual financial statements.

With some exceptions, the transition to IFRS-led accounting by statutory entities did not significantly affect the amount of equity highlighted under accounting standards in line with European directives. This situation can be explained on the one hand by the fact that the provisions in the accounting rules compliant with European directives have been gradually aligned with the provisions of IFRS, and on the other hand by the fact that those entities did not have financial instruments that are classified accordingly. IAS 32 as financial liabilities and equity instruments.

Equity items that have changed at the first date of application of IFRS have been carried forward, highlighting the adjustments caused by the first time application of IFRS and share capital and reserves that have been adjusted for inflation in accordance with IAS 29 to most entities.

The information presented by entities shall "enable users of the annual financial statements to evaluate the objectives, policies and processes of the capital management entity" (IAS 1 para. 124A).

In order to carry out this assessment, information users must have both general knowledge of the concepts and provisions of the relevant accounting standards and knowledge of the legislation applicable to the entity under review.

Company law, accounting law (Accounting law no. 82/1991, republished, with subsequent amendments and completions) and accounting regulations approved by O.M.F.P. no. 2844/2016 have been amended and supplemented successively so that the provisions contained therein do not limit the proper application of IFRS.

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REQUIREMENTS IMPOSED ON THE UNIVERSITIES OF THE REPUBLIC OF MOLDOVA ON THE PATH OF ACHIEVING SUSTAINABILITY

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Abstract: *The fundamental aspects, factors, as well as, the premises for ensuring the sustainability in higher education in the Republic of Moldova were analysed in this paper. The relevance of the research topic derives from the need to ensure sustainability in the universities in the Republic of Moldova, in the context of the competitive struggle. The research problem represents the need to identify the challenges faced by the higher education institutions from the country, along with the necessity to elucidate effective solutions in order to achieve sustainability. In this context, a methodological analysis of the regulations in higher education in our country was performed. The research methodology focused on the use of several methods such as: analysis, synthesis, induction, deduction, abduction, documentation, scientific abstraction. In conclusion, we can reiterate that the higher education system in the Republic of Moldova must be connected to EU regulations in order to anchor in the process of sustainable university development. An imperative for educational institutions in the country converts into the implementation of the university sustainability management and the assurance of sustainability strategies.*

Keywords: *higher education system, The Code of Education, higher education institutions, sustainability, competitiveness, university sustainability management.*
JEL Classification*: Q18, I23.*

1. Introduction

In the 21st century, everyday education, in consort with other sectors, undergo major transformations, both at the level of education organization and at the level of activity of different institutions in the field of education. Globally, education is changing and is shaped by the requirements and context of the external environment in which educational institutions operate.

Sustainability is a concept focused on achieving human development goals. Simultaneously, it is concentrated on supporting the capacity of ecosystems by providing natural resources and protecting life and nature, without diminishing the chances of future generations.

This concept is perceived as significant in ensuring social and economic development, as it was first defined by the United Nations World Commission on Environment and Development (WCED) in 1987.

The Report "Our Common Future" defined "sustainability as one that strives to meet the needs of present and future generations in accordance with the exploitation of the environment" (Brundtland Report, 1987).

Recent developments also show that the "Europe 2020 strategy: a strategy for smart, sustainable and inclusive growth" adopted by the European Union in 2010, highlights the crucial importance of innovation, education, the digital society, training and lifelong learning in this context (EU, 2010).

According to the Global Action Programme on Education for Sustainability adopted by UNESCO in 2014, it can be specified that political agreements, financial incentives and modern technologies are not enough to achieve sustainability (UNESCO, 2014).

Scholars in the domain of sustainability, Erpenbeck and Rosenstiel, highlight the fact that "sustainability requires a change in people's consciousness and provides a framework for further decisions and actions. Accordingly, «a new culture of learning» is required (Erpenbeck, Rosenstiel, 2003).

In this context, we considered it necessary to carry out an assessment of the requirements imposed on the higher education system in the Republic of Moldova in order to achieve sustainability. In terms of this research, we had the opportunity to identify the challenges and prospects for the development of the higher education system on the way to achieving sustainability.

2. Research Methodology

The research methodology focused on the use of documentation as a fundamental method, which helped us to obtain relevant results, but also to point out the most important challenges faced by the universities in achieving sustainability.

The goal of the research consists in the methodological study of the problems and challenges of achieving sustainability in the higher education system in Moldova.

The objectives of the research subsumed to the general goal are:

O1: studying the regulation of the higher education system in Moldova;

O2: identifying the main problems and challenges of higher education institutions on the way to achieving sustainability;

O3: highlighting solutions for the sustainable development of Moldovan universities.

Research Questions

RQ1: What is the development level of the higher education system in Moldova?

RQ2: What are the major problems and challenges for higher education institutions in Moldova on the way to achieving sustainability?

3. Theoretical Background

According to sustainability experts such as Urbaniec, education should focus on self-organization and competence. The purpose of education is to support the development of the personality, in order to manage complex situations and make appropriate decisions, to respond and to have high ethical standards in accordance with the requirements of sustainability (Urbaniec, 2018).

Researcher Ellis explains that dependency refers to the reliability, maintainability, affordability and consistency of services. Students must be able to rely on the university that offers the tools for success. The higher education system is supported by the ingenuity and passion of those who have chosen an academic life (Ellis, 2010).

Scholar Taylor mentions that "universities must ensure that the quality of their services, education and research is properly oriented, so as to train well-educated graduates in the values of sustainability. Teaching and research are intrinsically connected", and research support is another path to sustainability (Taylor, 2007).

According to Professor Bob Forrant, "for universities to stimulate sustainability, they need to focus on creating new knowledge, preserving indigenous knowledge, disseminating both types of information, economic and social innovation, solving problems associated with rapid globalization and urbanization, and the development of a strong community-based organization" (Forrant, 2002). The researcher reiterates that "the ability to create sustainability thrives on clearly defining the objectives of the higher education institution and supporting different strategies of researchers and academia". The research continues in the context of ensuring sustainability and the research assessment is needed for the sustainability strategy and the achievement of objectives.

4. Results

In recent years, the education sector has undergone major changes. A first change that has taken place in the education system in the Republic of Moldova is the

implementation of the Bologna system in the education system of the Republic of Moldova. The Bologna Declaration of 1999 laid the foundations for the achievement of a Common Higher Education Area in Europe by promoting common strategic directions at national and institutional levels (Bologna Declaration, 1999).

Important changes also took place in the higher education system, which was also vulnerable to several changes that took place with the development of society but also with the adoption of the Bologna Declaration. In the field of higher education, the organization of the Bologna system is summarized to the organization of the higher education system in graduate and postgraduate education, as shown in Figure 1.

According to the data in Figure 1, we can see that the higher education system is organized on 2 major levels:

a. university higher education – which comprises 2 dimensions:

- undergraduate studies – the length of studies is 3-4 years depending on the field of education. It ends with obtaining a Bachelor's degree diploma in this particular field;
- master studies – the length of studies is 1.5-2 years, depending on the chosen field of education. It ends with obtaining a Master's degree diploma in this particular field;

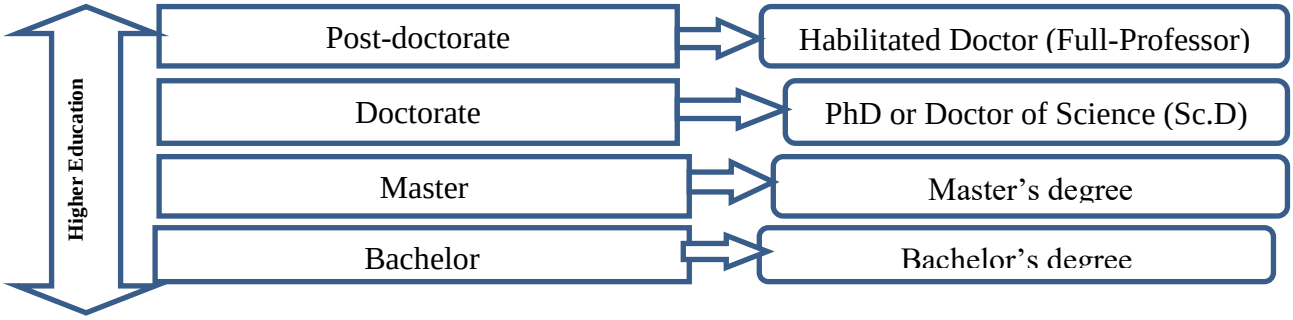

Figure 1. Organizing the higher education system according to the Bologna system

Source: developed by the author based on the Education Code, 2014

b. postgraduate higher education – includes 2 other major dimensions:

- doctoral studies – the length of studies is 3-4 years depending on the program of studies (full-time or part-time). It ends with obtaining a Doctorate Diploma in a certain field;
- post-doctoral studies – the length of studies is over 3-4 years, depending on the field of studies. It ends with obtaining the title of Habilitated Doctor.

The implementation of the Bologna system in the higher education system of the Republic of Moldova has contributed decisively to the joining of the education system in our country with the requirements and principles of organizing higher education of the European Union.

Major changes to the European Union's directives regarding higher education organization also took place in 2017, when the EU Commission published a "Renewed EU Agenda for Higher Education" (COM (2017)0247, 2017).

The agenda is focused on 4 important dimensions:

- aligning the skills development in higher education with labour market needs;
- ensuring higher education that is widely accessible and more conducive to inclusion, and increasing its interaction with society;
- stimulating the innovation capacity of higher education;
- increasing the effectiveness and efficiency of higher education.

Subsequently, another major change took place in May 2018, when following the Gothenburg Summit, the European Commission published a communication "Building a stronger Europe: the role of youth, education and culture policies" (COM(2018)0268, 2018).

The contents of this document focus on the creation of a common European area of education, and includes the following aspects:

- strengthening the funding of education through Erasmus+ programs;
- opening more than 20 European universities by 2024, which would contribute to obtaining diplomas recognized throughout Europe;
- creating a student ID card that would encourage the mobility of students throughout Europe;
- a proposal for the automatic recognition of higher education and higher secondary education diplomas, as well as the results of periods of study spent abroad (COM(2018)0270, 2018).

The higher education system in the Republic of Moldova is regulated by the legislation of our country but also by the legislation of the European Union.

If we analyse the provisions of the Education Code regarding the organization of universities, we can see that universities are classified into 3 basic categories, as shown in Table 1.

Table 1. Classification of universities in the Republic of Moldova

Category	Its description
Category A	The university falls into Category A if: a) pursues higher education in one or more fields of professional training; b) carries out research, development, innovation or artistic creation activities; c) offers Bachelor, Master and Doctoral programs.
Category B	The university falls into Category B if: a) pursues higher education in one or more fields of professional training; b) carries out research, development, innovation or artistic creation activities; c) offers Bachelor and Master programs.
Category C	The university falls into Category C if: a) pursues higher education in one field of professional training; b) carries out research or artistic creation activities; c) offers Bachelor programs.

Source: developed by the author based on the Education Code, 2014

According to the Education Code, universities are subject to external quality assessment every 5 years, based on the methodology and criteria developed by the National Agency for Quality Assurance in Education and Research, and approved by the Government.

The importance of accreditation is enormous since it contributes to:

a) ranking of higher education institutions by categories during the accreditation procedure;
b) provisional operation authorization, accreditation and periodic re-accreditation of higher education institutions, as well as the hierarchy of study programs;
c) ranking of higher education institutions based on the methodology approved by the National Agency for Quality Assurance in Education and Research (Education Code, 2014).

The network of higher education institutions, at the level of 2019, consists of 29 units, including 19 state and 10 non-state institutions. Most higher education institutions have their headquarters in Chisinau – 25 units. Balti and Comrat, Cahul and Taraclia have 1 higher education institution in each location (NBS, 2020).

In Table 2 we showed the dynamics of higher education institutions in the country by property, and the number of students in these institutions by sex (women and men).

Table 2. Dynamics of higher education institutions in Moldova, 2010-2019

Indicators	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17 /18	18/19
Total number of institutions	33	34	34	32	31	31	30	29	29
Number of state institutes	19	19	19	19	19	19	19	19	19
Number of non-state institutions	14	15	15	13	12	12	11	10	10
Total number of students	107813	103956	102458	97285	89529	81669	74726	65543	60608
of which women	61202	58576	57371	55067	51496	47217	42828	38054	35091
of which men	46611	45380	45087	42218	38033	34452	31898	27489	25517
Students from state institutions	88791	84946	83008	78919	72474	66938	62108	55341	50620
Students from private institutions	19022	19010	19450	18366	17055	14731	12618	10202	9988

Source: developed on the basis of NBS data, 2020

Based on the data from the table, we can see that in the last 9 years there has been a negative dynamic of reducing the number of higher education institutions from 33 institutions in 2011 to 29 institutions in 2019. State institutions have registered the same number, 19 institutions, but the private units were reduced from 14 institutions in 2011 to 10 institutions in 2019, otherwise by 40%.

From the data in the table, we notice that the dynamics of the number of students in Moldovan institutions is decreasing, following a negative trend for the period of 2011-2019 from 107813 students in the 2010-2011 academic year to 89529 students in 2014-2015, registering a decrease by 17%, to reach 60608 students in 2018-2019 or by 44% compared to 2015 and by 43% compared to 2010-2011. This is explained by the low birth rate, by the departure of young people abroad and their subsequent employment in those educational institutions, along with the migration of young people in order to reunite with their families.

If we analyse the dynamics of Moldovan students enrolled in the period of 2011-2019 in state higher education institutions, then we can observe a negative trend for the entire analysed period. Accordingly, if in 2010-2011 a number of 88791 students studied in state institutions, then in 2014-2015 their number decreased by 18.4% to 72474 students, so that, at the end of 2019, their number would reach 50620 students, registering a decrease of 30.02% compared to 2014-2015, and 43% compared to 2010-2011.

If we analyse the dynamics of students enrolled in private higher education institutions, we can observe that at this point there is also a negative trend from 19022 students in 2010-2011 to 17055 students in 2014-2015, to reach in 2018-2019 to a number of 9988 students, or 41.4% less than in 2014-2015, and 47.5% compared to 2010-2011.

In Table 3, we have shown the distribution of graduates according to the category of state or non-state universities.

Table 3. Distribution of graduates of higher education institutions by state or non-state institution, 2010-2019

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total	28408	27788	26730	24848	24274	23630	21886	19943	18142	16266
State	22370	22111	21548	20105	19649	18867	17632	16228	14945	13267
Non-state	6038	5677	5182	4743	4625	4763	4254	3715	3197	2999

Source: developed on the basis of NBS data, 2020

Analysing the data presented in Table 3, we can observe that during the period of 2010-2019 the dynamics of graduates of higher education institutions in Moldova registers a negative trend from 28408 graduates in 2010-2011 to 24274 graduates in 2014-2015, and in 2018-2019 it records 17288. This shows that the number of graduates decreased in 2018-2019 by 28.77% compared to 2014-2015 and by 38.4% compared to 2010-2011. Equally, graduates from state institutions and those from private institutions show a negative trend.

Graduates of state institutions, in the period of 2010-2019, decreased from 22370 graduates in 2011 to 20105 in 2014, afterwards registering 13267 graduates in 2019, remarking a decrease of 34.01% compared to 2014, and a reduction of 40.69% compared to 2011.

On the other hand, we observe the same negative trend in the number of graduates from private institutions, while in 2011 a total of 6038 graduates were registered, in 2014 this record is reduced to 4625 graduates, in addition, in 2019 the number of graduates totalled 2999 people. It is worth mentioning that in 2019 the number of graduates decreased by 35.15% compared to 2014, and by 51% compared to 2011.

In Table 4, we have shown the dynamics of the total number of students enrolled according to the type of study financing.

Table 4. Dynamics of the total number of students enrolled by form of studies (budget or contract), 2011-2020

	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Number of students, total	88791	84946	83008	78919	72474	66938	62108	55341	50620	47745
Budget	30907	29175	28340	28098	27470	26669	25872	23260	21883	20754
Contract	57884	55771	54668	50821	45004	40269	36236	32081	28737	26991
Enrolled, total	23128	23018	23086	22417	20501	20939	18990	16459	15858	16599
Budget	9527	9381	10241	10263	9807	9348	9029	7300	7595	7662
Contract	13601	13637	12845	12154	10694	11591	9961	9159	8263	8937

Source: developed on the basis of NBS data, 2020

Based on the data presented in Table 4, we observe that in the period of 2011-2020 the total number of students decreased from 88791 people in 2011 to 72474 people in 2015, afterwards reaching the record of 47745 people in 2020. We also point out that in 2020 there was a decrease in the number of students by 34.1% compared to 2015, and by 46.22% compared to 2011.

Correspondingly, the same decreasing trend is maintained in the dynamics of students in higher education institutions enrolled on a basis of budget funding. Thus, in 2011 there were enrolled 30907 persons, while in 2015 their number decreased to 27450

people, and in 2020 it reaches the record of 20754 people. Accordingly, in 2020 there is a decrease by 24.39% compared to 2015, and by 32.85% compared to 2011.

We observe the same trend regarding the students enrolled on a contract basis funding. In 2011 57884 people were paying the tuition fee for studies, while in 2015 this number decreased to 45004 people, and in 2020 it reaches the record of 26991 people. So, at the level of 2020, there is a decrease of 40% compared to 2015, and a decline of 53.37% compared to 2011.

A significant reduction is attested, in the analysed period of 2011-2020 and at the level of students enrolled in higher education institutions. If in 2011 23128 people were enrolled in higher education institutions, then in 2015 this number is reduced to 20501 people, and in 2020 it reaches the record of 1399 people. Thus, we attest a decrease in 2020 compared to 2015 by 19.03%, and compared to 2011, a decrease by 28.2%.

In Table 5, we have shown the dynamics of higher education institutions in Moldova according to the forms of study (full-time/ part-time).

Table 5. Graduates of higher education institutions by form of study (full-time/ part-time)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total	28408	27788	26730	24848	24274	23630	21886	19943	18142	16266
Full-time	19672	20846	21201	19615	18367	16482	15649	14114	13240	11694
Part-time	8736	6942	5529	5233	5907	7148	6237	5829	4902	4572

Source: developed on the basis of NBS data, 2020

Based on the data presented in Table 5, we can observe that in the period of 2011-2019 the number of students from higher education institutions who studied in higher education institutions decreased from 28408 students in 2011 to 23630 students in 2015, and it reaches the record of 16266 students in 2019. We observe a reduction in 2019-2020 compared to 2015 by 31.1%, and compared to 2010-2011 by 42.71%.

The dynamics of full-time students in higher education institutions in Moldova in 2011-2020 decreased from 19672 students in 2011 to 16482 students in 2015, and in 2020 this number reaches the amount of 11694 students. Thus, there is a significant decrease in 2020 compared to 2015 by 29.04%, and compared to 2011 a decrease of 40.55% is identified.

We also identify a negative trend in the dynamics of students studying on a contract basis in higher education institutions in the country. Thus, in the period 2011-2020, a decrease is identified from 8736 students in 2011 to 7148 students in 2015, so that in 2020 this number will reach 4572 students. In this context, we can identify that in 2019-2020 there is a decrease of 36.08% compared to 2015 and 36.03% compared to 2011.

In Table 6, we have schematically shown the dynamics of graduates of higher education institutions by cycles, Bachelor's and Master's degrees, in the period of 2010-2019.

Table 6. Graduates of higher education institutions by Cycles, 2010-2019

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total	27800	27149	26036	24082	23471	22978	21243	19943	18142	16266
Bachelor (Cycle I)	23264	22049	20132	17744	17062	17063	15141	13421	11952	10763
Master (Cycle II)	4536	5100	5904	6338	6409	5915	6102	5744	5399	4754

Source: developed on the basis of NBS data, 2020

Based on the data presented in Table 6, we can observe that the total number of graduates of higher education institutions in Moldova decreased from 27800 people in 2011 to 22978 people in 2015, and it registers the record of 1266 people in 2020. Accordingly, for the analysed period, we identify a significant decrease in the number of graduates of higher education institutions. In 2020, the number of graduates decreased by 29.21% compared to 2015, and by 41.49% compared to 2011. All the data analysed show a drastic decrease and the problem of higher education institutions in Moldova regarding the reduction of their students' number, the main reasons being the low birth rate, the migration of families from Moldova, along with the phenomenon of globalization, which has increased the possibilities for students to go to study abroad.

Figure 2 shows schematically the dynamics of graduates of higher education institutions in Moldova, cycle I and cycle II, in the period of 2010-2019.

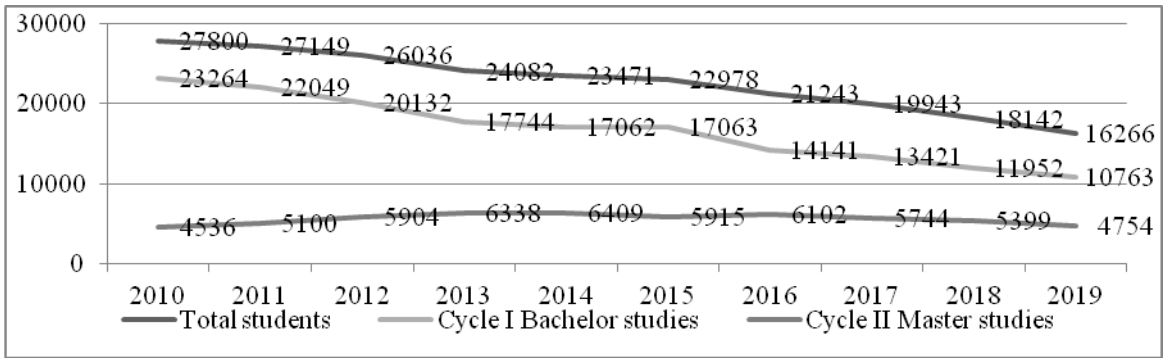

Figure 2. Dynamics of the number of students by years of study 2010-2019, by cycles

Source: developed on the basis of NBS data, 2020

The data from Figure 2 shows that in 2010 23264 students were enrolled in the first cycle. In 2015 this number is reduced to 17062 students, and 10763 students are registered in 2019. There is a decrease in the number of undergraduate students in 2019 by 36.92% compared to 2015, and by 53.74% compared to 2011. This decrease is largely due to the penetration of the phenomenon of internationalization in the system of education, and the reduction of the birth rate which caused a dramatic reduction in the number of students.

In addition, there is a positive trend in the number of students enrolled in the second cycle of Master's studies in higher education institutions in Moldova in 2010-2019. From the data shown in Figure 2, we notice that students' number increased from 4536 in 2011 to 6409 in 2015, and in 2019 it reaches the record of 4754 students. In 2019 the number of master students in Moldova decreased compared to 2015 by 25.8%, but increased compared to 2011 by 105% compared to 2011. This increase can be largely explained by the increase in students' motivation to continue studies and to complete both cycles of studies in higher education, but also by the requirements of the Education Code for certain categories of employees, where the completion of Master's studies is required. In this context, Master's studies have become a necessity for students who want a successful career, and who want to advance in the professional path.

Analysing the dynamics of the number of students per 10000 inhabitants in the period ofv2010-2019, we obtained the following picture, showed in Figure 3.

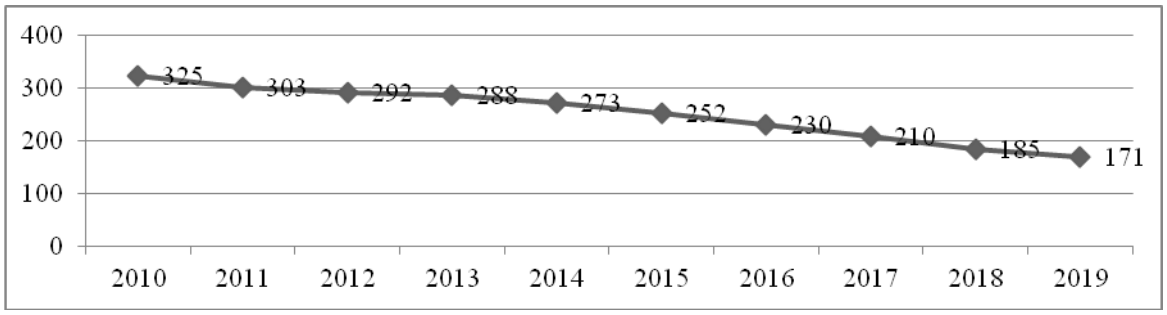

Figure 3. Dynamics of the number of students per 10,000 inhabitants during the period of 2010-2019

Source: developed on the basis of NBS data, 2020

Analysing Figure 3, we can see that the dynamics of the number of students per 10000 inhabitants in higher education in the period of 2010-2019 decreased from 325 students in 2010 to 252 students in 2015, reaching 171 students in 2019. Thus, in 2019 the number of students per 10000 inhabitants decreased by 31.6% compared to 2015 and by 47.38%.

Analysing the dynamics of the share of students studying on a contract basis in the total number of students in the period of 2010-2019, we obtained the following picture, showed in Figure 4.

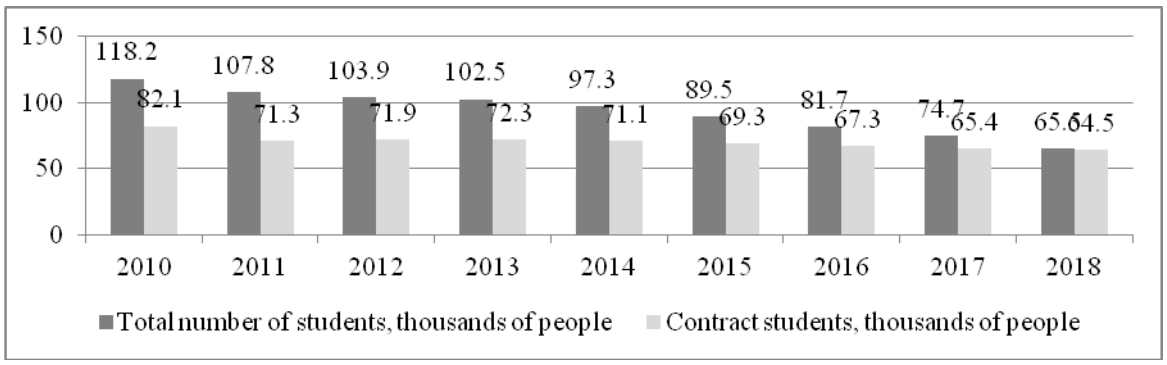

Figure 4. The segment of students studying on a contract basis from the total number of students during the period of 2010-2019

Source: developed on the basis of NBS data, 2020

If we analyse the data presented in Figure 4, we can see that out of the total number of students who are enrolled in higher education institutions in Moldova, most of them are students enrolled on a contract basis. This is explained by the small number of budget places allocated by the state for certain priority specialties for Moldovan students. For example, for economic specialties the number of budget places is reduced for each specialty being allocated 3-5 budget places, while the demand is higher than over 20 places per specialty.

Analysing the dynamics of the enrolment rate in youth in the period of 2011-2018, we obtained the following data presented in Figure 5.

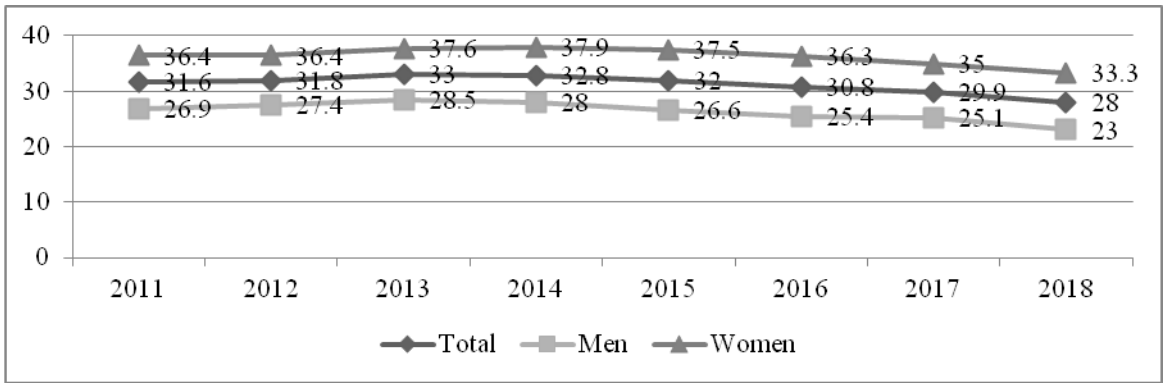

Figure 5. Dynamics of the youth enrolment rate in higher education, 2011-2018
Source: developed on the basis of NBS data, 2020

Analysing the data presented schematically in Figure 5, we can see that in the period of 2011-2018, the enrolment rate in youth increased from 31.6 in 2011 to 32 in 2015, and then it registers a decrease in 2018, reaching the value of 28. Thus, in 2018 the enrolment rate in youth decreased by 12.5%, and compared to 2011 it decreased by 11.39%.

An interesting evolution registers the dynamics of the scientific-didactic and didactic staff within the higher education institutions in the period of 2011-2019, which is shown schematically in Figure 6.

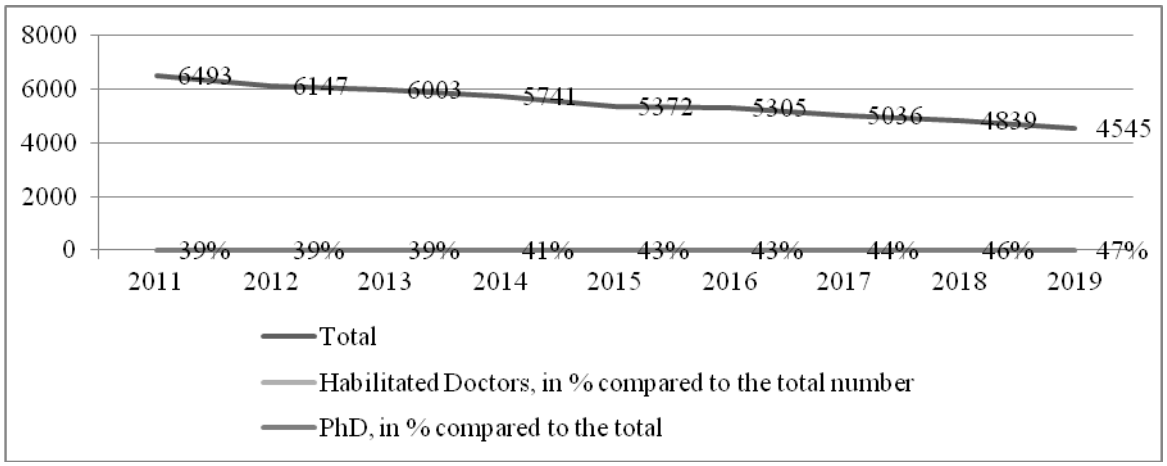

Figure 6. The dynamics of the scientific-didactic and didactic staff within the higher education institutions during the period of 2011-2019
Source: developed on the basis of NBS data, 2020

Analysing the dynamics of the scientific-didactic and didactic staff in higher education in Moldova, we can observe that in the period of 2011-2019 there is a negative dynamic of the scientific and scientific-didactic staff in higher education. Thus, the total number of staff in the period of 2011-2019 decreased from 6493 people in 2011 to 5372 people in 2015, and it reaches the record of 4545 people in 2019. Consequently, in 2019 there is a decrease of 15.4% compared to 2015 and 30.0% compared to 2011. This decrease is largely due to the decrease in the number of students, the reduction of academic groups, but also the tightening of the conditions of quality of didactic and scientific-didactic staff.

If we analyse the dynamics of the number of PhDs/ Doctors of science from the total number of teaching and scientific-teaching staff in higher education in Moldova, we

can see that in 2011-2019 there is an increase in the percentage of staff with a scientific degree in higher education institutions in Moldova, from 39% in 2011 to 43% in 2015, reaching 47% in 2019.

In addition, a trend of maintaining the percentage of Habilitated Doctors from the total number of scientific-didactic and didactic staff is maintained, for the analysed period, at the level of 7%. This demonstrates the difficulty of conducting postdoctoral studies and the lack of time to promote postdoctoral studies.

5. Conclusions

Taking a retrospective of the development of higher education institutions in the Republic of Moldova, we can highlight that our country faces major problems in terms of the number of students studying at Moldovan universities. Thus, following the research, we identified the subsequent problems and challenges for higher education institutions in Moldova:

- *reducing the total number of students for the analysed period of 2011-2019* – to a large extent, this problem derives from the reduction, during this period, of the birth rate, along with the penetration of the phenomenon of globalization in education. Thus, this shows that a great number of students chose to study abroad, in foreign universities, where they can get quality studies and budget funding sources. Another portion of students go abroad due to the phenomenon of family reunification;
- *increasing the number of students in the second cycle of master studies* – the number of master students in the period of 2011-2019 increased from 4536 to 4734. This phenomenon is due, in large part, to the implementation of the Bologna system, and the desire of students to get complete higher education studies, which involves the first cycle of Bachelor studies and the second cycle of Master studies;
- *increasing the number of teaching staff with scientific titles of doctors* – for the analysed period of 2011-2019 the percentage of staff holding the scientific title of doctor of science increased from 39% in 2011 to 47% in 2019. This phenomenon is largely fuelled by the requirements of the Education Code, which addresses the need to have doctors, i.e. staff with a scientific degree, to hold lectures within universities.
- *maintaining the percentage of habilitated doctors in the total number of didactic and scientific- didactic staff* – during the analysed period, the percentage of habilitated doctors was maintained at the level of 7%, with small variations over the years.
- *reducing the number of students per 10000 inhabitants* – for the analysed period of 2011-2019, the number of students per 10000 inhabitants decreased from 325 students to 171 students, i.e., by 47.38%.

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CRIPTOCURENCIES – THE MODALITY OF PAYMENT OF THE FUTURE. RISKS AND VULNERABILITIES

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Abstract: *Cryptocurrencies or virtual currencies have become a global phenomenon in recent years, where data and information about these types of assets and/or financial transactions have taken the form of news on web pages and/or media channels in recent times. Cryptocurrency is a type of financial asset, intangible as opposed to real currencies or real assets (real estate/securities, art, jewellery, etc.), which takes the form of a digital/virtual currency, using cryptography to achieve transaction security. This type of currency is difficult to counterfeit/counterfeit, as most cryptocurrencies are represented by decentralized systems, based on block technology, the presence of a distributed register, imposed by a different network of computers. In recent times, cryptocurrencies have seen spectacular price increases, with their value increasing exponentially on the free market. This is due both to the crisis generated by the global COVID-19 pandemic, against the backdrop of investor distrust of "classic" investment and savings instruments, and against the background of an aggressive global press campaign that has fervently promoted this type of financial assets. Although it is possible that in the coming period, as a result of the saturates of the cryptocurrency market, their value will decrease in terms of how they are made the currency of the future, given the anonymisation of the investor and the easy way of exclusively online trading of virtual currencies specific to the Millennium generation. In recent times, cryptocurrencies have become a successful investment tool, which can continue in the short to medium term, but the investment risk is quite high, being a relatively volatile savings tool. There are prerequisites for the use of virtual currencies as a means of payment for the future, given that "classic" online means (e.g. bank cards) lose in terms of additional costs (e.g. fees charged by banks).*

Keywords: *Cryptocurrencies, cryptography, blockchain, COVID-19, investments.*
JEL Classification: *G23, G29.*

1. Introduction

Cryptocurrencies are created through a process called mining, which involves using the processor in an electronic device to solve complicated math problems, resulting in virtual currencies. Users can buy coins from brokers, then store or spend them using cryptographic wallets. The best known and, at the same time, the most widely used cryptocurrencies worldwide are Bitcoin, Ethereum, Ripple or Litecoin.

Thus, the virtual currency is not issued by any central authority, which makes it, from this point of view, relatively immune to the financial-fiscal policy promoted by central banks or to the mix of economic policies of national governments. This aspect is both an advantage in the sense that the value of these virtual currencies is relatively constant

Under EU law, under the 5th Money Laundering Directive (Directive No 2018/843), adopted during 2018, 'virtual currencies' are a digital representation of a value, which is not issued or guaranteed by a central bank or a public authority, which is not necessarily linked to a legal currency and which does not have the legal status of currency, but which can be accepted by natural or legal persons as a means of exchange. This regulation accepts virtual currency as an alternative means of payment, which induces the idea of tacit acceptance of these types of currency at Community level. In this context, we appreciate that regulatory rules need to be made at EU level, which will create the prerequisites for their introduction into the market, including their acceptance on the banking and capital markets.

According to the same directive, this type of currency may be transferred, stored and traded by electronic means, i.e. the functions/uses of virtual currencies may take various forms, such as:

- means of payment, exchange or investment;
- product of value storage or for use in online casinos.

2. Advantages and disavantages of the use of virtual cryptocurrencies

The main advantage lies in the fact that virtual currencies operate under a decentralised system, there is no central authority to issue it, such as a central bank. This highlights the liberal way in which the value of these currencies is regulated solely on supply and demand in an unregulated market.

This means of payment also uses cryptography, making it almost impossible to counterfeit virtual currencies, at least to date. The use of advanced cryptographic means, in conjunction with the anonymization of user data, offers the possibility of anonymizing the owners of these virtual currencies, which can be exploited by organized crime groups to conceal and capitalize illicit income from criminal activities. It is noted that an advantage can turn into a systemic vulnerability that can be misused by certain persons who cannot justify certain illegally obtained income.

At the same time, the use of cryptocurrencies allows their holders to make an encrypted backup of the virtual currency, in this respect being secured against possible illicit actions subsumed to cybercrime. Virtual currency users are also constantly in control of cryptocurrency transactions, and their transfer is carried out quickly anywhere in the world.

Another advantage is that there is no limit on the amount for transfers made and the fees charged are variable.

In terms of disadvantages, we point out that the use of virtual currencies is currently relatively low and the volatility of these modern means of payment is high given that this type of currency exists in limited quantity and its value is given exclusively by the supply and demand that exist edwell on the market at that time.

Another negative aspect is that the transactions are irreversible and the cancellation is impossible to achieve. This feature is specific to virtual currencies that cannot be returned in any way, given how they are created and how they are traded.

Some states have also prohibited the use of certain virtual currencies by law, requiring users to study specific legislation before launching certain cryptocurrency transactions. Another major disadvantage is that not all traders accept the cryptocurrency as a means of payment. This aspect is specific to the emergence of a new means of payment, the same aspect being found when the bank card was placed on the market as a means of payment, at that time many traders did not agree to the payment made by these modern means. In fact, this can be defined as the reluctance and resistance to change of society.

Looking at the positive and negative aspects, we appreciate that this modern means of payment will be the future, given the main advantage, namely the very low fees and the universality of these cryptocurrencies that will replace national currencies over time. This trend is converging with the phenomenon of market globalisation, which has been manifesting itself strongly in recent times. These common markets will require a common currency that is easy to use through the virtual environment and the Internet. Recent technological advances demonstrate that the future is online, and markets and means of payment will adapt to this virtual working environment.

3. Cryptocurrencies used at the world level

3.1. Bitcoin

It is the first virtual currency to use a computer protocol of encrypted and decentralized blockchain transactions. The coin was created on 19.08.2008 by a natural person and/or group of individuals known/known under the pseudonym Satoshi Nakamoto.

The first quotation between bitcoin and the U.S. dollar was published at a distance of about a year, on 05.10.2009, when such a virtual currency was worth 0.001 US And 0.00071 euros respectively, so that at the end of 2017, after 17 years, a bitcoin was worth over 11,000 U.S. dollars and 9,100 euros respectively.

In October 2018, more than 17.33 million digital currencies with a total market value of approximately USD 115 billion were put into circulation. Although more than 10 years have passed since the first whitepaper was drafted in this regard, the Bitcoin cryptocurrency remains the most popular and valuable digital asset, at 22.06.2020, being quoted at about $10,000.

According to the European Central Bank, bitcoin is a speculative asset, a symbol that can be traded by electronic means but does not exist in physical form and is not created by a public authority.

This type of currency has a virtual character, does not constitute currency/currency, as it is not supported by any central public authority, does not constitute a generally accepted form of payment, as it is extremely volatile compared to a currency type currency, and users are not legally protected.

The success of the first Bitcoin digital asset led to the emergence of other competing currencies, known as "altcoins", such as: Ethereum, Litecoin, ES OS and Cardano.

At the macro level, the cryptocurrency market currently amounts to thousands of cryptocurrencies, with a total market value of over US$200 billion.

3.2. Bitcoin Cash

Bitcoin Cash is the result of the Bitcoin fork, being released in the summer of 2017. The initial trading price was around $300, but by February 2018 it had already reached records above the $2,500 threshold. Currently, the virtual currency is trading around $160, with about the same amount of cash in circulation as Bitcoin.

3.3. Litecoin

Known as the "little brother of Bitcoin" this is a peer-to-peer cryptocurrency with higher exchange speeds, as well as a substantially higher trading limit, i.e. 84 million tokens available. However, its mining process is more intense and cumbersome, and its market capacity is about 1/20 of the size of Bitcoin.

Launched in 2011, Litecoin was created by Charlie Lee, a graduate of MIT and a former engineer at Google. Litecoin is based on a global open source payment network that is not controlled by any central financial-banking authority.

3.4. Ethereum

The virtual currency was originally developed as a superior network of "global computers" and aimed to get rid of the need to create applications from third-party companies such as Apple. Applications developed on Ethereum are found within a distributed public platform/network, where miners can earn "ether" for network powering.

Ethereum can be compared to a vehicle moving on its ethereal platform driven by users who want to develop and execute applications inside the ether or by investors who want to make purchases of other digital currencies using ethereum. Ethereum introduced the concept of 'smart contract' and thus they were able to appear within its network, new tokens, most of which were financed by ICONs.

3.5. Ripple (XRP)

This type of virtual currency was designed as a real-time global settlement network that offers instant, secure and low-cost international payments. Launched in 2012, Ripple allows banks to make cross-border payments in real time, with transparency throughout the process and at much lower costs.

Ripple considers that 'value distribution is a powerful way of stimulating certain behaviours' and now intends to distribute XRP primarily through 'business development transactions, incentives to liquidity providers that offer tighter spread for payments and the sale of XRP to institutional buyers interested in investing in this type of virtual currency'.

3.6. Monero

This cryptocurrency was launched in April 2014 and is a secure, private and undetectable currency. The development of this cryptocurrency is completely based on donation and is determined by a particular community.

Monero was launched with a strong focus on decentralisation and scalability and allows complete privacy by using a special technique called "ring signatures". Given the exceptional security mechanisms, Monero has frequently been associated with the operations of organised criminal entities around the world.

3.7. Eos

The coin was launched in June 2017 by cryptocurrency pioneer Dan Larimer. Like other digital currencies, the EOS is designed to model Ethereum, thus providing a platform on which developers can build decentralized applications.

THE OS is made up of THE EOS. IO, similar to the operating system of a computer and acts as a network of blocks for the digital currency. EOS does not use a coin-type mining mechanism, but block manufacturers are rewarded in THE EOS tokens based on their production rates.

3.8. Stellar

It is a distributed, blockchain-based logistics network linking banks, payment systems and individuals to facilitate transfers of values, bringing in low cost as an additional benefit. Stellar has its own cryptocurrency called Lumens, which is denoted with the symbol XLM.

Stellar is operated by a non-profit organization called Stellar.org, founded by Jed McCaleb, who also co-founded another popular cryptocurrency, Ripple-XRP. Stellar is a cross-border value transfer and payment system that connects financial entities in order to significantly reduce trading costs and time periods. Each transaction imposes a standard mining fee with a value of 0.00001 lumens.

Stellar's main activity concerns developing economies in the areas of remittances and bank loans, i.e. those that are still outside the realm of banking services. An interesting aspect is that the network does not charge people or institutions for its use. The currency received initial funding from organisations such as BlackRock, Google.org and FastForward.

3.9. IOTA

Represents a distributed register for the registration and execution of transactions between entities in the Internet Of Things (IoT) ecosystem. IOTA owns a cryptocurrency called mIOTA. The IOTA platform uses an acyclic, decentralized graph (DAG) instead of a blockchain mechanism.

The IOTA/mIOTA system cryptocurrency will allow micropayment transactions between connected devices. IOTA also aims to solve 3 other common problems at the Bitcoin level, namely: high scalability, high trading fees and low network speed. According to the IOTA development team, the network will be faster than the blockchain network on which Bitcoin is based. The novelty introduced by IOTA relates to the way in which transaction validation and mining are carried out. In order to register a transaction,

the esends of THE OTA must "mine" that transaction themselves by validating two previous transactions, thus there being no cost associated with the transactions on the IOTA network.

3.10. Dash

DASH is a peer-to-peer cryptocurrency that has derived from the Bitcoin currency to provide users with faster and higher-privacy transactions.

Dash is the first digital currency with a decentralised governance system, its name coming from the association of digital and cash terms.

Dash was released in January 2014 under the name Xcoin and then changed its name to Darkcoin. The association with DarkWeb led to another name change in March 2015, and Darkcoin was called Dash. As an alternative to Bitcoin, Dash offers a faster and totally anonymous service to its users.

3.11. Cardano (ADA)

The ADA is the only currency with a "scientific philosophy and a research-based approach". This assumes that its open-source block is undergoing a rigorous review process between academic experts and programmers.

It is a blockchain project founded by Charles Hoskinson, co-founder of Ethereum, with the aim of "providing a more balanced and sustainable ecosystem" for cryptocurrencies. The ADA aims to address scalability and infrastructure issues, with Cardano often associated as the "Japanese ethereum".

4. Legislative aspects at the European level

At the level of the European authorities, various views were expressed regarding the legal classification/classification of 'virtual currencies', on the basis that they:

- do not constitute legal coins or cash, so they should be considered rather means of exchange, rather than legal means of payment - the consequence is that there is no obligation to accept payment made in virtual currency;
- fall into the category of intangible/intangible assets;
- constitutes a contractual means of payment, not necessarily legal, being perceived as an alternative investment with specific risks inherent in investment risks specific to the financial-banking sector;
- constitute units of account and can therefore be considered as financial instruments;
- is a form of financial asset, mainly in the short term, other than cash.

Thus, although most EU Member States' authorities allow virtual currencies to circulate, at their level, financial sector supervisors and/or central banks have consistently issued warnings, informing the public of the absence of any type of regulation and/or supervision of these types of currencies/transactions on the risks posed by operations with such virtual currencies and that they do not enjoy a well-defined and accepted legal status at EU and international payment level.

The warnings in question followed or accompanied similar ones issued by the three European supervisory authorities, namely: the European Securities and Markets Authority, the European Banking Authority, the European Insurance and Occupational Pensions Authority.

In this context, in the vast majority of EU Member States, regulators and supervisors, such as central banks or national financial sector supervisory agencies/authorities, do not recognise the virtual currency resulting from blockchain technology as a legal instrument or means of payment. However, the use by natural or legal persons (e.g. companies) of this type of payment instrument is not explicitly prohibited in EU Member States.

Among the first states to regulate virtual currencies, the distributed ledger technology and the initial supply of 'tokens' and adopted specific (partial) legislation in this respect are 2 EU states (France and Malta).

Restrictions on the use of virtual currencies are still in place in Belgium and Latvia.

At the level of some EU Member States (e.g. Austria, Estonia, France, Germany, Ireland, Lithuania, Luxembourg, the United Kingdom), initial offers of virtual currencies (tokens) and providers of digital wallet services are subject to the common financial sector/financial assets regime, following a case-by-case analysis of the (financial) instruments or products offered and the activities carried out.

In the area of taxation, in countries such as Bulgaria, Denmark, Finland, France, Latvia, Lithuania, Poland, the United Kingdom, Slovakia, Slovenia, legal imperatives often take the form of administrative instructions, with activities in relation to virtual currencies subject to the provisions of tax legislation.

The 5th Money Laundering Directive requires EU Member States to ensure that, among other entities, providers of exchange services between virtual currencies and providers of digital wallets are authorised or registered.

In European Union law, the legal and accepted definition of virtual currencies is found in the provisions of Directive (EU) 2018/843 of 30 May 2018 – 5th Money Laundering Directive, (i.e.: virtual currencies) are a digital representation of the value which is not issued or guaranteed by a central bank or public authority, is not necessarily linked to a legally established currency and does not hold the legal status of currency or physical money, but is accepted by natural or legal persons as a means of exchange/payment and which can be transferred, stored and traded electronically.

Digital wallet provider, according to the same European regulatory act, is that "entity that provides services for the safe keeping of private cryptographic keys on behalf of its customers for the possession, storage and transfer of virtual currency." These two definitions constitute points 18 and 19 of Article 3 of Directive (EU) 2015/849 – 4th Money Laundering Directive.

By judgment issued on 22.10.2015, in Case C-264/14, Skatteverket/David Hedqvist, the Court of Justice of the European Union (CJEU) held that, since the virtual currency 'bitcoin' is a contractual means of payment, it could not be regarded as a current account or a deposit account, payment or transfer, but, unlike claims, cheques or other negotiable instruments referred to in Article 135(2). It shall constitute a direct means of payment between the operators accepting it. Therefore, transactions to exchange traditional currencies with virtual currency 'bitcoin' or vice versa, do not fall within the scope of the exemptions provided for in that provision

On the other hand, in the case of the exemptions provided for in Article 135 (1) (a) and (b) of Regulation (EEC) No 2081/92, the Commission shall, in accordance with the procedure laid (1) (e) of the VAT Directive, relating to transactions relating, inter alia, to 'currencies, banknotes and coins used as a legal tender', the CJEU held that transactions relating to non-traditional currencies constitute financial transactions.

5. Legislative aspects at the national level

In December 2018, the national legislative framework subjecting the taxation of the income from the transfer of virtual currency was adopted.

Currently, Law No. 210 of 8 November 2019 on the activity of issuing electronic money regulates the conditions for access to and conduct of the activity of electronic money issuing and carrying out the activity of the provision of payment services by electronic money institutions, the prudential supervision of electronic money institutions and the regime for the redemption of electronic money.

In recent years, the National Bank of Romania (BNR) has consistently stated that it does not have powers in the supervision of virtual currency schemes and virtual currencies.

On 11.03.2015, BNR issued a communiqué in which it stressed that 'virtual currency is neither national currency nor currency, nor is its acceptance for payment legally binding'.

As regards the specific case of transactions relating to the virtual currency bitcoin, from the point of view of the VAT regime, the Ministry of Public Finance stated that the judgment of the Court of Justice of the European Union (CJEU), in which the European court ruled on the application of the VAT exemption, should be taken into account.

It should be noted that, with regard to value added tax (VAT), a harmonised area at EU level, the Court of Justice of the European Union (CJEU), by judgment of 22.10.2015 in Case C-264/14 – Hedqvist (detailed in the previous chapter in the case-law section), decided that 'bitcoin' virtual currency exchange operations with traditional currencies are exempt from VAT due to the consolidated general budget of the State.

By the amendments made by Law No. 30/2019 to the provisions of the Tax Code, the legislature introduced a new taxable source, namely the income from the transfer of virtual currency (art. 114 Tax Code).

In accordance with Article 115 (2) of the Treaty, the Commission shall, in accordance with the procedure laid down in (1) of the Tax Code, as amended by Law No. 30/2019: "Income tax shall be calculated by withholding tax at the time of the grant of income by the income payers, by applying the 10 % rate on gross income for the income referred to in Article 114, with the exception of the income referred to in Article 114 (1). (2) (l) and (m)'. The exceptions to the obligation to withhold tax at source also include income from the transfer of virtual currencies.

In accordance with Article 116, paragraph 1 shall be replaced by the following: (1) of the Tax Code, taxpayers who derive income from the transfer of virtual currency shall be required to submit the single declaration on income tax and social contributions due by natural persons to the competent tax body, for each tax year, up to and including 15 March of the year following that of the realization of the income.

In accordance with the provisions of the same article, the tax rate shall apply to the gain from the transfer of virtual currency, determined as the positive difference between the selling price and the purchase price, including the direct costs of the transaction. Earnings below the level of 200 lei/transaction shall not be taxed provided that the total earnings in a fiscal year do not exceed the level of 600 lei.

In view of the numerous amendments made by Directive No 17/2002/EC, the Commission has aview to amend the provisions of this 2018/843 with regard to the trading of virtual currencies, as well as the increasing use of cryptocurrencies for the purpose of money laundering and terrorist financing, Romania has adopted the necessary legislative framework to prevent and combat money laundering and terrorist financing.

Thus, GO no. 111 of 01.07.2020 on the amendment and completion of Law No. 129/2019 for the prevention and combating of money laundering and terrorist financing, includes providers involved in exchange services between virtual currencies and fiduciary currencies in the category of entities that will have new obligations related to the identification of suspicious activities.

Against this background, providers of virtual currencies and digital wallets, electronic money institutions and payment institutions from other Member States providing services on the territory of Romania are obliged to ensure compliance with the legal provisions on the prevention and combating of money laundering and terrorist financing for the activities performed.

The new obligations of these providers range from measures relating to customer knowledge, to identify the risk associated with these services and their use for criminal purposes, to identify the beneficial owner, to the monitoring and reporting to the authorities of certain transactions.

Also, under the new legislative changes, providers of exchange services between virtual currencies and fiduciary currencies and providers of digital wallets will have to follow an authorisation and registration process, to be coordinated by the Ministry of Public Finance.

At the same time, electronic money institutions and payment institutions are obliged to impose contractually on agents and distributors providing services on the territory of Romania the framework for compliance with the provisions of Law No. 129/2019 and the regulations issued in its application and to ensure that the necessary procedures and systems are implemented and their obligations are respected, including by carrying out checks.

ANAF has launched into public debate the draft Order of the President of ANAF on the organisation and operationalisation of the Central Electronic Register for bank accounts identified by IBAN and for the approval of the procedure on the obligation of credit institutions, payment institutions and electronic money institutions to provide information, in accordance with Article 61 of Law No. 207/2015 on the Code of Fiscal Procedure.

The new order also approves the procedure concerning the obligation of credit institutions, payment institutions and electronic money institutions to provide information on the identification data of the account, the customer account holder, persons holding the right of signature for accounts opened or claiming to act on behalf of the customer, the beneficial owner of the customer account holder , as well as those of the security deposit box concessionaire.

5. Perspectives on future use of virtual currencies

The emergence of cryptocurrencies is appreciated by experts in the field with the appearance of bank cards. The invention and use of bank cards were initially viewed with reluctance among consumers, but at present this is a common means, preferred compared to the use of banknotes. The development of the internet network has led to the proliferation of online sales that required the widespread use of bank cards. This phenomenon has also been enhanced by the emergence of the COVID-19 pandemic which has radically altered the behaviour of a large segment of the population, especially those with a high degree of education and who have understood the advantages of online commerce.

The current trend of cryptocurrency use is increasing, due to their popularity and usefulness, in which some significant increases in their value/share are expected in the future.

In the same context, the economies of developing countries will experience a greater impact from the Bitcoin currency early on. Countries with high inflation rates, which also have reasonable access and connectivity to the internet, will tend to be relatively active in the bitcoin transaction area, developing important global active nodes in the future.

Furthermore, the intensification of transactions in new cryptocurrencies (e.g., XRP, Stellar, EOS, Cardano, Holochain, Waves) will lead to future developments on the Internet 3.0 area, foreshadowed as a safer and more sustainable global Internet network, but which will be exposed to the intensive work of organised crime entities.

Developments in the virtual currency area over the past 10 months, against the background of restrictions from the COVID-19 pandemic, also reflect the intense activity and sophistication/refining of cybercrime entity methods.

While the improvement of means of combating cybercrime, means of monitoring the cryptocurrency market, as well as other types of digital assets have led to significant seizures of cryptocurrencies, there are signs that such fraud will be the subject of intense investigations in the immediate aftermath.

To better understand what the long-term advantages are of using virtual currencies it is necessary to realize that the most widely used technology for creating cryptocurrencies is blockchain. According to experts, this technological concept of novelty can be compared to the Internet since it is a complex network where information is distributed.

Thus, the blockchain can be compared with a huge registry, a database, or a Microsoft Excel document (table spreadsheet), where transactions, sales and purchases are written, an endless, unlost list, and the entries and records in the blockchain cannot be changed, even by those who initiated them.

In order to better understand how virtual currencies are generated, we need to look at how the first cryptocurrencies were generated in November 2008, when the Satoshi Nakamoto entity (possibly a person or group of people) posted on the Internet network the article "Bitcoin – A Peer – to – Peer Electronic Cash System", detailing for the first time in the world how to make virtual money using connections between computers and their processing power (bitcoin = bit + coin , i.e. "currency in bits"). Subsequently, bitcoin software was launched and implemented in January 2019.

Each bitcoin is earned by solving a cryptographic problem that requires large processing resources, the process being called "mining". The number of bitcoin coins is currently limited to 21 million. So far, about 16 million units of bitcoin have been produced, and the maximum number of units (21 million) is expected to be reached in 2025.

When an online transaction is made, e.g., money transfer, this transaction is transmitted to the entire system (all computers that have a special program that keeps the public register). This transaction is put together with other transactions, forming a block. The user (his computer) who solves a mathematical equation that validates the transaction, in order to be added to the registry, is rewarded with digital currency. Basically, mining involves solving complex mathematical equations that validate the transaction, in order to be added to the register, is rewarded with digital currency. Basically, mining involves solving very complex mathematical equations that validate a transaction.

In fact, cryptocurrencies emerged as an alternative to the traditional banking system during one of the worst financial crises in decades (2008-2010). We appreciate that virtual currencies come as an addition to the current banking system and aim to revolutionize the classic remittance system, not to replace it.

An analysis by Jim Reid, an analyst at Deutsche Bank, will grow alternative virtual currencies steadily by 2030, with digital currencies currently expected to replace the classic ones. On the other hand, the representatives of the National Bank of Romania consider that these cryptocurrencies are a risky means of saving, given the large fluctuation they have, as well as the fact that they operate in a poorly regulated market from a banking point of view.

However, the future of cryptocurrencies will result from the dynamics of the market profile, but it must be considered that they had a higher price in crisis situations, Bitcoin being created at the very beginning of the crisis in 2008-2010. The volatility of these cryptocurrencies means that investments in these means of payment are high risk, with

negative effects on their beneficiaries. From a financial point of view, this type of virtual currency can currently be used for short- and medium-term speculative investments.

6. Conclusion

In the future, analysts appreciate that virtual currencies will represent the future of the means of payment, with the emphasis of the phenomenon of economic globalisation, which will gradually lead to a decrease in the importance of national currencies and the introduction of a universal monetary system that will reduce the risks arising from the exchange rate difference, which will reflect much better the ratio between supply and demand.

In terms of the degree of acceptance of virtual currencies by most of the population, this indicator is currently low, but favourable premises for growth are created, against the background of acceptance of this method of payment by the banking system and, above all, by traders.

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