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DIGITALIZATION OF LEARNING PROCESSES - CHALLENGES AND OPPORTUNITIES

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Abstract: *In the age of digitization of learning processes, significant challenges and opportunities arise. The radical changes brought about by digitization in teaching methods can be perceived both as stressors and as opportunities for transformation. Challenges may include adapting to new technologies, managing large volumes of information, or ensuring equitable access to resources for all students. On the other hand, digitization offers opportunities in terms of personalization of learning, online collaboration and access to diverse educational resources. It is essential to explore these challenges and opportunities to effectively use new technologies in the digital age of education. Therefore, the purpose of the article is to find an answer to the question "What are the challenges and opportunities faced by teachers and students in the digitization of the instructional-educational act"?*

Keywords: *digitization, school environment, instructional-educational act, students, teaching staff.*

JEL Classification: *M15, O15.*

1. Introduction

In the age of digitization of learning processes, significant challenges and opportunities arise. The radical changes brought about by digitization in teaching methods can be perceived both as stressors and as opportunities for transformation. Challenges may include adapting to new technologies, managing large volumes of information, or ensuring equitable access to resources for all students. On the other hand, digitization offers opportunities in terms of personalization of learning, online collaboration and access to diverse educational resources. It is essential to explore these challenges and opportunities to effectively use new technologies in the digital age of education.

The current digitization process is driven by the incorporation of information and communication technology advances in areas combining electronics and mechanics, cybernetics and the development of innovative software such as those based on machine learning. The easier access of individuals to these innovations through their devices (Internet of Things - IoT) and the new demands of technology target groups have also contributed to the expansion of digitization, especially among digital natives.

2. The advantages and disadvantages of digitizing the instructional-educational process

There are many advantages of digitizing educational materials and resources.

First, this process enables extensive access to information. Students can now easily find and use digital resources from anywhere in the world with just an internet connection.

Second, digitization facilitates the rapid and efficient exchange of information. Teachers can share resources with colleagues or post them online for students to access at their convenience.

In addition, digital resources are often more interactive and engaging than their analog counterparts. Students can work with multimedia content and learning tools that actively involve them in the learning process.

It is indisputable that digitization has the potential to revolutionize the education system. However, there are also a number of challenges that need to be addressed while implementing these changes. These include ensuring that all students have access to the necessary technology and resources, preparing teachers and students to use new digital tools and resources effectively, and addressing data privacy and security concerns.

3. Research study methodology

The research study wants to answer the question "What are the challenges and opportunities faced by teachers and students in the digitization of the instructive-educational act?".

The survey unit is represented by teachers and students from high school units, from Dâmbovița county. The voluntary strategy was used. The sample is 50 teachers and 50 students.

In table 1, you can see the gender of the respondents in the two categories (teachers, students), as follows:

- Male teaching staff 45.7% and female 54.3%.
- male students 55%, and female students 45%

Table 1. Weight of answers for question "I1." Gender of respondents"

		Procent
Professors	male	45.7
	female	54.3
	Total	100.0
Students	male	55
	female	45
	Total	100.0

Source: developed by the author

Table 2 analyzes the respondents' opinions regarding the tools used by teachers and students. Analyzing the answers according to the teachers' and students' opinions, it can be found that the main tool used is the laptop (51.4%, 48.6%). Laptops are portable, allowing users to easily transport them between home and school or other locations. This aspect is important for flexibility in learning and teaching, especially in the context of distance learning or extracurricular projects. Table 2. Weight of answers for question "I2." The tools used by teachers and students".

Professors		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	interactive digital board	6	17.1	17.1	17.1
	computer	7	20.0	20.0	37.1
	laptop	18	51.4	51.4	88.6
	tablet	4	11.4	11.4	100.0
	Total	35	100.0	100.0	
Students		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	interactive digital board	18	51.4	51.4	51.4
	laptop	17	48.6	48.6	100.0
	Total	35	100.0	100.0	

Source: developed by the author

Analyzing table 3, the challenges arising from the digitization of learning processes can be seen. The students' answers are: they do not have access to devices or the internet 21.0%, lack of skills in the effective use of new digital tools and resources 26.0%, data privacy and security 53.0%. The teachers' answers about the challenges of digitization are: they do not have access to devices or the Internet 20.0%, lack of skills in the effective use of new digital tools and resources 26.0%, data privacy and security 54.0%. The challenges identified in Table 3 highlight the need for investment in digital infrastructure, continuous training programs to develop digital skills and the implementation of strict cyber security measures. Only by addressing these aspects can an effective and safe transition to digital education be ensured, benefiting both students and teachers.

Table 3. Weight of answers for question "I3." What are the challenges in digitizing learning processes?"

		Procent
Professors	they don't have access to devices or the internet	20.0
	lack of skills in the effective use of new digital tools and resources	26.0
	data privacy and security	54.0
	Total	100.0
Students	they don't have access to devices or the internet	21.0
	lack of skills in the effective use of new digital tools and resources	26.0
	data privacy and security	53.0
	Total	100.0

Source: developed by the author

Table 4 shows the opinions of the respondents regarding the advantages of using digital tools in learning processes, as follows:

- didactic staff believe that the advantages are: digital resources are interactive 18.0%, allow extended access to information 50.0%, customize the inscriptive-educational process 32.0%.

- students believe that the advantages are: digital resources are interactive 20.0%, allow extended access to information 50.0%, personalize the inscriptive-educational process 30.0%.

The similar views of teachers and students regarding the advantages of using digital tools reflect the shared recognition of the benefits of technology in education. Extended access to information and personalization of the learning process are seen as the main strengths, while the interactivity of digital resources is also valued. These advantages emphasize the importance of integrating technology in education to improve the quality and efficiency of the educational process.

Table 4. Weight of answers for question "I3." What are the advantages of using digital tools in learning processes?"

		Procent
Professors	digital resources are interactive	18.0
	allows extended access to information	50.0
	personalizes the inscriptive-educational process	32.0
	Total	100.0
Students	digital resources are interactive	20.0
	allows extended access to information	50.0
	personalizes the inscriptive-educational process	30.0
	Total	100.0

Source: developed by the author

The personalization of the educational process is considered a major advantage, as it allows the adaptation of teaching materials and methods according to the needs and learning pace of each student. This can lead to more effective and individually tailored learning.

4. Conclusions

In this era, using a computer during class is no longer considered a luxury, but a necessity. Each teacher can create a concise presentation of the lesson in PowerPoint or creatively integrate artificial intelligence. Technology can replicate, replace or automate already existing educational practices.

Even if not every subject and every lesson lends itself to the use of the computer, it can have a significant impact on students' attention when it is used as a complementary tool in the lesson.

In a modern perspective, the teacher focuses on facilitating learning opportunities for students. In this framework, the use of new technologies represents the ways in which students' learning activities are shaped.

Digitization of learning processes brings both significant challenges and opportunities. It is essential that policymakers, educational institutions, teachers and communities work together to address the challenges and capitalize on the opportunities offered by digital technologies. Constant adaptation and continuous training will play a crucial role in the success of this transformation.

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APPLICATIONS OF THE NUDGE THEORY IN THE SUPPORT OF CHILDREN IN DIFFICULTY

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Abstract: *Children are a vulnerable group of population due to their need of support in meeting their fundamental needs. Their welfare depends on one side on the influence of environment where they live and on another side - on their own choices, on the behavior they manifest. In the behavioral school of economic thought it's considered that children behaviors, especially those in difficult situations, can be influenced to produce desirable results in the increase of their welfare. Children in difficulty are a vulnerable group that would benefit from the approaches to the socioeconomic support provided by the behavioral economics. The child behavior study in behavioral economics developed at the intersection of economics with development psychology. Nudge theory is one of the main behavioral economics' directions that could offer insights in order to support children in difficulty. The paper aim is to identify good practices based on the principles of nudge theory that are tailored and applied to address socioeconomic challenges of children in difficulty. The work was developed within the framework of Subprogram 030101 „Strengthening the resilience, competitiveness, and sustainability of the economy of the Republic of Moldova in the context of the accession process to the European Union”, institutional funding.*

Keywords: *children in difficulty, support, nudge theory, social, economic, application.*

JEL Classification: *D01, D10, I12, J13.*

1. Introduction

Children rely significantly on others to meet their fundamental needs, which places them in a position of particular vulnerability. When the needs aren't met then the children are in the situation of difficulty. Since the needs are of various types, correspondingly, the difficulties are different as well. Difficulties can be divided in: emotional and behavioral difficulties (mental health issues, behavioral disorders), learning disabilities (cognitive delays, specific learning disabilities), social challenges (bullying, deficits of social skills), family and environmental issues (poverty that can limit educational resources, nutrition, safety), family dynamics issues (divorce, abuse, death of a parent or another family member), physical health issues (chronic illnesses, physical disabilities). Children's welfare is affected in a complementary way both by the environment in which they live and by the behavior they demonstrate. Thus, the behavior of the children, but also of the parents, also contributes to the creation of the difficult situation and a way to reduce the effects of these difficulties can provide the approaches to the socioeconomic support from behavioral economics which after being implemented can increase the children's welfare. Behavioral economics is a discipline at the intersection of economics and psychology, that explores the impact of psychocognitive, emotional, sociocultural factors on the economic decision-making made by individuals or organizations. Initially focused on the adults, behavioral economics later covered children as well, with the influences from the development psychology on economic theory. Numerous approaches within behavioral economics hold the potential to provide valuable perspectives for aiding children facing difficulties. This paper seeks to explore how behavioral economics' principles can be customized to confront the socioeconomic difficulties encountered by these children through the lens of nudge theory.

2. The nudge theory overview

The term "nudge" was introduced by J.Wilk in 1993 (Wilk, 1993) with influences originating from psychotherapy field from the works of G.Bateson, M.Erickson, P.Watzlawick, H.H.Weakland, B.O'Hanlon. Nudge theory was mainly developed and popularized by behavioral economists Richard H. Thaler and Cass R. Sunstein in their seminal work "Nudge: Improving Decisions About Health, Wealth, and Happiness" (2008). Contrasted with education, legislation, enforcement as ways to influence behavior, according to them, nudging, being an adaptive design, is "any aspect of choice architecture that alters people's behavior in a predictable way, without forbidding any option or significantly changing their economic incentives. To count as a mere nudge, the intervention must be easy and cheap to avoid. Nudges are not mandates. Putting the fruit at eye level counts as a nudge. Banning junk food does not." (Thaler & Sunstein, 2008:6). Choice architecture is the design of the various ways in which choices can be presented to decision makers and the impact of this presentation on the decision-making process, including the number of choices, how to describe the attributes of the choices, and the presence of an implicit choice.

Further, in the book „Thinking, Fast and Slow” (2011) Daniel Kahneman discusses the idea of "nudging" within the larger framework of how people make decisions and the field of behavioral economics, based on the work of R.Thaler and C.Sunstein, which advocates for "libertarian paternalism". This approach gently steers individuals towards choices that benefit their long-term well-being while preserving their freedom to choose otherwise. An example given is the automatic enrollment in pension plans; this default setting subtly encourages saving for retirement without removing the option to opt out.

A.Tversky's work with D.Kahneman on cognitive biases and heuristics forms a critical psychological basis for understanding how nudges can be effective. Contrary to D.Kahneman and A.Tversky, who collaborated extensively on identifying biases associated with prospect theory, R.Thaler and C.Sunstein concentrated on pinpointing heuristics—common patterns of thought that frequently result in logical errors—and outlined strategies for nudging individuals or groups towards specific ways of thinking.

The prospect theory was developed by D.Kahneman and A.Tversky in 1979 and it addresses how people make choices between probabilistic alternatives that involve risk, where the probabilities of outcomes are known (Kahneman, 2011). It is particularly concerned with how people value gains and losses, demonstrating that losses have a greater emotional impact on an individual than an equivalent amount of gains—a concept known as loss aversion. Its key concepts include: loss aversion, which represents the preference of people to avoid losses rather than acquiring equivalent gains, reference points (usually the people's status quo) relative to which people evaluate outcomes rather than evaluating in absolute terms, diminishing sensitivity according to which gains and losses grow larger, their subjective value increases at a decreasing rate.

The nudge theory by R.Thaler and C.Sunstein focuses on influencing behavior by changing the way choices are presented to people. It operates under the umbrella of choice architecture and aims to make it easier for people to make decisions that lead to better personal and societal outcomes without restricting freedom of choice. Its key concepts include: choice architecture, which is the practice of influencing choice by organizing the context in which people make decisions, defaults (default options) the use of which require no additional effort from individuals, thus guiding them towards desired outcomes, libertarian paternalism which depicts the idea of designing interventions that nudge people toward beneficial behaviors without curtailing their freedom to choose. On one side, prospect theory explains why people make irrational choices, highlighting the cognitive biases and emotional

influences that affect decision-making. On another side, nudge theory uses insights from behavioral sciences like those provided by prospect theory to design better decision-making environments. Prospect theory is more theoretical, providing a framework to understand decisions under risk. Nudge theory is more practical, providing strategies to influence decisions positively while respecting freedom of choice. Prospect theory helps in understanding the "why" behind decision-making anomalies, while Nudge theory focuses on the "how" to steer decisions in a more favorable direction without coercion. While prospect theory provides the foundational understanding of decision-making biases, nudge theory offers tools to apply these insights in real-world settings to foster better decision-making outcomes.

Others contributors to nudge theory are D.Ariely which conducted experiments and written books like "Predictably Irrational" (2009), which explore the kinds of cognitive biases and decision-making errors that nudge theory aims to address, M.Shankar that led the White House's Social and Behavioral Sciences Team during the Obama administration in US where applied nudge theory principles to federal government programs to improve their effectiveness, E.Shafir whose work on decision-making and cognitive scarcity complements nudge theory by highlighting how people's decisions are influenced under conditions of limited resources, G.Loewenstein that has explored the role of emotion in decision-making, which is essential for designing effective nudges, D.Laibson the research on time inconsistency and hyperbolic discounting of which has helped explain why people benefit from nudges in settings like savings and health behaviors and others (Ariely, 2009).

3. Applications of nudge theory in the support of children in difficulty

R.Thaler and C.Sunstein also applied the nudge theory and choice architecture to vulnerable children, recommending the application of nudges for their protection. With regard to the support of children separated from their parents, they believe that "[s]tates should clearly state what range of support is generally acceptable as part of income (subject, perhaps, to upper limits). The best approach might be an explicit formula based on factors such as the age of both spouses, their earning capacity, length of marriage and so on." (Thaler & Sunstein, 2008:226).

As noted by R.Thaler and C.Sunstein, the libertarian economist M.Friedman believed that the best way to improve the quality of schools is to introduce competition, as a result of which less advantaged children have the most to gain because rich families can afford to send children to private schools, so he suggests offering education vouchers so that parents can send their children to the school of their choice, and as a result children from poor families would be closer to equality with the more privileged middle and upper class (Thaler & Sunstein, 2008:199). One criticism of vouchers would be the possibility of subsidizing wealthy parents who can already afford to send their children to fancy private schools, and public schools would end up getting kids that private schools don't want. R.Thaler and C.Sunstein criticize the fact that parents implicitly choose the neighborhood school for their children rather than a better performing one.

They analyzed different cases of social mimicry of harmful behaviors, such as the higher probability of teenagers to become pregnant if they observe other pregnant teens, the contagiousness of behavior that leads to obesity, the imitation of ephemeral trends in the media, the academic effort of students influenced more by their roommates or dorm than by college, with major consequences for their grades and their future prospects (Thaler & Sunstein, 2008:55).

If a parent enrolled in a private insurance plan works out at a health club in a given week, has a child enrolled in sports activities, has a blood pressure check with normal results, they can earn "vitality points" that can be used to get plane tickets, hotel rooms, magazine subscriptions, combining health insurance with nudges designed to make him live a healthier life and reduce costs for insurance companies (Thaler & Sunstein, 2008:233).

In order to prevent teenage pregnancies, especially those after the first, within 1-2 years it is suggested to apply a "one dollar a day" program that teenagers receive for each day they are not pregnant. Promising results are noted for the low cost of the program compared to the significant costs for children born to teenage mothers, and the recurring payment "is important enough to encourage teenage mothers to take steps to avoid becoming pregnant again" (Thaler & Sunstein, 2008:234).

They describe an experiment on children with two situations: in the first situation in two adjacent houses the children could approach to choose between the same two chocolate bars (Three Musketeers and Milky Way) at each house, and in the second condition they could approach only one house, where they were asked to "choose any two candy bars they like" from large piles of both chocolates so that the children would not think it was rude to take two of them. The experiment showed that the two situations produced very different results. In the house with both types of chocolates, each child chose one of each candy. But only 48% of the children chose one of each candy when choosing in the two houses one after the other. Although the consequences of choosing two different candies are minimal, "naïve diversification in portfolio selection can have more significant consequences on what people do and how much money they end up with" (Thaler & Sunstein, 2008:123-124).

They also suggest the idea of automatically enrolling absent parents in a payment plan that deducts a fixed amount from their bank accounts monthly to ensure child support, without allowing an opt-out, questioning whether traditional marriage is necessary for child protection and family stability, suggesting that civil unions and private agreements might provide similar benefits and advocating for strong default legal rules to support dependents after the dissolution of long-term relationships, instead of relying solely on the institution of marriage. To strengthen their point they indicate to research that many couples entering into marriage are often unaware of the typical outcomes concerning child support or alimony payments in the event of a divorce.

S.Wolf and G.Lichand (2023) in their article "Nudging parents and teachers to improve learning and reduce child labor in Cote d'Ivoire" explore the effects of sending nudges via SMS to parents and teachers to improve educational outcomes and reduce child labor. The study finds no significant impact on learning outcomes overall, but notes some differences based on various subgroups. Messages to parents alone showed a more positive impact compared to messages to teachers or both groups together. The study highlights the potential of low-cost, scalable strategies to support children's education in marginalized communities, though it underscores the need for further research to optimize these interventions.

Nudge theory is increasingly used in public policy, where governments like those of the US and UK employ behavioral strategies to subtly influence public actions while preserving choice. This is executed through specialized groups such as the UK's Behavioral Insights Team (BIT). Digital nudges for children, for instance, have been tested to curb excessive screen time by changing the screen color to grayscale or limiting phone usage time, proving effective in modifying habits related to mobile use (Parekh, 2022). Additionally, nudges are utilized to foster healthier eating habits without eliminating options. Techniques such as positioning fruits at eye level or employing gentle prompts like emoticon stickers or persuasive text near food items have successfully encouraged better dietary choices in places

like schools and cafeterias. Efforts to encourage choosing stairs over elevators have involved visual prompts like footprints leading to stairs and motivational signs. The success of these nudges has varied, with some showing increased stair use, while others have not observed significant changes or have noted adverse reactions due to feelings of coercion.

Giubilini et al. (2019) in the paper "Nudging Immunity: The Case for Vaccinating Children in School and Day Care by Default" discuss a vaccination policy where children would be vaccinated by default at schools or daycares, but parents would retain the right to opt-out. The proposed policy uses "nudges" that subtly influence decisions, leveraging common decision-making biases to increase vaccination rates without forcing parents' hands. This approach aims to address vaccine hesitancy effectively by making vaccination the easy and default choice, potentially overcoming barriers due to procrastination or indifference. The authors argue that this method is ethically sound as it respects autonomy and could be supported by public opinion, based on their empirical research in the UK. They emphasize that such a nudge is non-coercive and preserves the freedom of choice, which aligns with ethical considerations in public health interventions.

Park and Clemson (2020) identify different nudging strategies that can help children in difficulty to overcome their challenges. Teachers use various visual and interactive strategies to organize classroom activities and promote good habits among young children. Individual carpet mats are placed around a larger rug to help each student identify their own space during circle time. Stick-on feet on the floor guide children to form straight lines, aiding in orderly transitions. Additionally, using transparent soap dispensers with a small toy inside motivates children to wash their hands more often by making the activity more engaging.

Brief psychological interventions can be aimed at enhancing children's sense of social belonging and growth mindset to improve their self-image and confidence in learning. These interventions are particularly beneficial for disadvantaged children or those with a fixed mindset whose learning is impacted by low self-confidence or a negative self-perception. Strategies include creating flexible grouping in the classroom to foster interactions and friendships among diverse students, and providing positive affirmations to support and encourage students as they learn new skills. These approaches help children feel more connected and confident in their educational environment. Extrinsic motivation can be used as a behavioral nudge to promote desirable actions in children, particularly those with behavioral challenges. This strategy involves providing rewards like tokens, praises, and other forms of encouragement to incentivize activities such as reading. For example, children can earn points for each book they read, which can then be exchanged for favorite items like stickers, toys, and stamps. This method is particularly effective for children who require additional motivation through positive extrinsic rewards to encourage appropriate behavior.

Social comparison can be used as an intervention that uses peer pressure and relative grading to encourage children to adhere to social norms by comparing themselves with others. This method is particularly effective in influencing children's behavioral changes using non-monetary rewards. The intervention is noted to be more engaging in mixed-gender groups, where both boys and girls exhibit equal levels of competitiveness. An example can be by using a fun competition game to encourage children to quickly and quietly line up, leveraging their natural competitiveness. However, it is crucial for educators to consider the ethical implications and design these interventions carefully to ensure they promote healthy and ethical competition among children. The strategy of boosting skills can focus on teaching children practical abilities that enhance their competence and enable them to make better decisions. For instance, children who struggle with organizing can be taught how to manage their time and materials effectively to complete tasks within a set timeframe. A specific

example can be through helping children learn to clean up after playing by using labeled bins with pictures and names of toys, teaching them responsibility and enhancing their organizational skills. The default approach leverages children's tendency to opt for preset actions, such as choosing play over study. By setting defaults that encourage more beneficial behaviors, like mixed-gender play, children naturally engage in these without additional effort required. By framing choices in terms of potential loss or gain, children's decisions are influenced. For instance, children might be more motivated to engage in reading if they are told they can choose a toy, but might lose it if they don't read for a set time.

The strategy of peer group manipulations uses peer influence to encourage children to conform to desirable behaviors, such as wearing masks or practicing hygiene, by creating a social environment where these behaviors are the norm. Providing specific, smaller deadlines helps children with self-control issues stay on track. This can be managed with tools like picture checklists or reminder charts to assist children in completing tasks on time. Goal setting involves setting clear, concrete goals to guide behavior. Children are encouraged to set personal goals related to their tasks, helping improve their self-control and focus, like setting a specific amount of time for reading. The method of reminders involves giving children cues about previously learned behaviors or tasks, particularly useful for those with cognitive limitations. For example, reminding children of the time left for an activity helps them complete tasks within the allotted time. Informational nudges presume providing accessible information to help children make informed decisions, especially effective for those with attentional or cognitive limitations. This can involve explaining rules or providing social stories that guide appropriate behavior. Offering one-on-one help and making learning materials easily accessible to support children's learning, is particularly beneficial for those with cognitive or attentional challenges. An example is teaching children to sing a song while washing hands to ensure they do it for the necessary duration.

In their article, Lycett et al. (2017) conducted a systematic review to assess the effectiveness of nudge interventions on children's eating habits at home, analyzing studies from January 1996 to January 2015. These interventions subtly modify the environment to encourage healthier eating without heavily limiting choices. The review included 40 studies, with 33 (83%) showing improvements in dietary behaviors like increased vegetable consumption and reduced intake of unhealthy foods. The findings were particularly notable in older children and adolescents. However, the overall quality of the studies was relatively low: 43% were rated as weak, 40% as moderate, and only six studies were considered strong, highlighting concerns about the studies' quality and the broad applicability of the results. Research focused on controlled studies suitable for home settings and excluding those related to specific medical conditions. The review underscored the effectiveness of nudges in influencing short-term dietary choices, but questioned their long-term impact and effectiveness in real-world scenarios. This calls into question whether these behavioral changes can be sustained over time and contribute to long-term health outcomes like weight management. Most studies looked at nudges in isolation and focused only on immediate impacts, leading to uncertainties about their enduring effectiveness. Despite these limitations, nudges hold potential as part of comprehensive public health strategies aimed at improving children's diets, provided future research can overcome existing methodological shortcomings.

While nudges are widely used and can be effective in various behavioral domains, their success depends on how they are designed and implemented, reflecting the need for careful consideration of the choice architecture and the context in which nudges are applied.

4. Conclusions

The exploration of nudge theory in the socioeconomic support of children in difficulty reveals several critical insights and potential avenues for effective interventions. Nudge theory, rooted in behavioral economics, leverages subtle changes in choice architecture to guide individuals towards better decisions while maintaining their autonomy. This approach has significant implications for supporting vulnerable children across various domains. Nudge theory has been successfully integrated into public policies to influence behaviors in non-coercive ways. Governments have utilized this approach to address issues ranging from public health to education. For children in difficulty, nudges can be strategically applied to enhance educational outcomes, promote healthy behaviors, and reduce harmful practices like child labor. Specific applications in educational settings, such as nudging parents via SMS to improve school attendance and reduce child labor, demonstrate the theory's practical benefits. Various practical measures can be used as nudging strategies as effective ways to support children's learning and development, especially, the ones in difficulty, like using visually guided layouts for activities and transparent soap dispensers with toys to encourage handwashing, fostering a growth mindset through flexible grouping and positive affirmations, extrinsic motivation techniques such as rewards for reading, and the use of social comparison to encourage behavioral change, teaching practical skills, setting beneficial defaults, using peer influence, and providing reminders. However, the mixed results of such interventions underscore the need for targeted research to optimize their impact. Health-related nudges, like default options for vaccinations, show promise in addressing public health challenges by making healthier choices the easier option. In domestic environments, nudges have proven effective in promoting healthier eating habits among children. While the evidence suggests immediate improvements in dietary behaviors, the long-term sustainability of these outcomes remains uncertain. Future research should focus on the enduring impacts of dietary nudges and their integration into broader health strategies. The application of nudge theory is not without challenges. Its success heavily depends on the contextual and cultural specifics of the target population. The design and implementation of nudges must be carefully considered to avoid perceptions of coercion, which can diminish their effectiveness. Additionally, ethical considerations must be addressed, particularly in interventions involving vulnerable populations like children. Moving forward, it is crucial to continue refining the methods and strategies of nudge theory in child-related interventions. Collaborative efforts between policymakers, behavioral scientists, and educators are essential to create an inclusive framework that can adapt to diverse needs. There is also a pressing need for robust, long-term studies to assess the impact of nudges on children's long-term development and well-being. Nudge theory offers a compelling framework for developing interventions that can significantly improve the welfare of children facing socioeconomic difficulties. By carefully designing choice architectures that respect freedom and encourage beneficial choices, policymakers and practitioners can make substantial strides in supporting vulnerable populations. However, the nuanced nature of human behavior necessitates ongoing research and adaptation to ensure the ethical and effective application of this theory.

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COST OPTIMIZATION AND HUMAN RESOURCE EFFICIENCY IN INDUSTRIAL ECONOMIC ENTITIES: THE ROLE OF FUNCTIONAL ANALYSIS AND IMPROVEMENT STRATEGIES

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***Abstract:** It is well known that economic entities of any type generate costs and obviously fixed expenses. It is also known that industrial economic entities are permanently concerned with reducing production costs with the help of production programs by restructuring production costs and permanently improving labor productivity. The direct involvement of industrial economic entities with the help of the departments of specialized sections can lead to the dematerialization of writing efforts and the launch of projects necessary to reduce structural costs, especially in economic and commercial relations and relationships with third parties. The article explores the importance and implication of functional analysis in the management of costs and human resources within industrial economic entities. Through a detailed approach, the job evaluation processes, the identification of functional relationships and the integration of human resources quality into the overhead structure are examined. Also, strategies and principles are proposed for improving the management of human resources, considering the objectives of reducing costs and increasing efficiency. The study emphasizes the importance of a comprehensive approach and continuous analysis to optimize performance and profitability in the industrial environment.*

***Keywords:** costs, labor productivity, human resources, optimization of expenses, dashboard.*

***JEL Classification:** M41.*

1. Introduction

It is well known that economic entities of any type generate costs and obviously fixed expenses. It is also known that industrial economic entities are permanently concerned with reducing production costs with the help of production programs by restructuring production costs and permanently improving labor productivity.

The direct involvement of industrial economic entities with the help of the departments of specialized sections can lead to the dematerialization of writing efforts and the launch of projects necessary to reduce structural costs, especially in economic and commercial relations and relationships with third parties (fig.1):

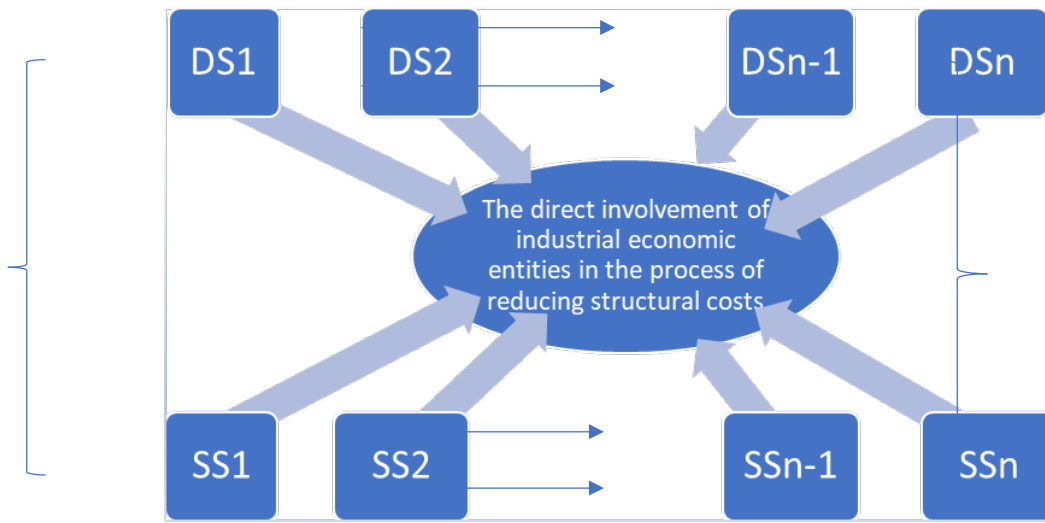


Fig.no. 1 Global vision regarding the reduction of structural costs in industrial economic entities (own conception)

In the figure above, I used the following notations:

- a) For specialized departments;
- DS1 = Specialized department 1
 - DS2 = Specialized department 2
 - DS_{n-1} = Department n-1
 - DS_n = Department S_n
- b) For specialized sections;
- SS1 = Specialized section 1
 - SS2 = Specialized section 2
 - SS_{n-1} = Specialized section n-1
 - SS_n = Specialized section S_n

The reduction of structural costs in industrial economic entities requires the following stages (fig.no. 2):

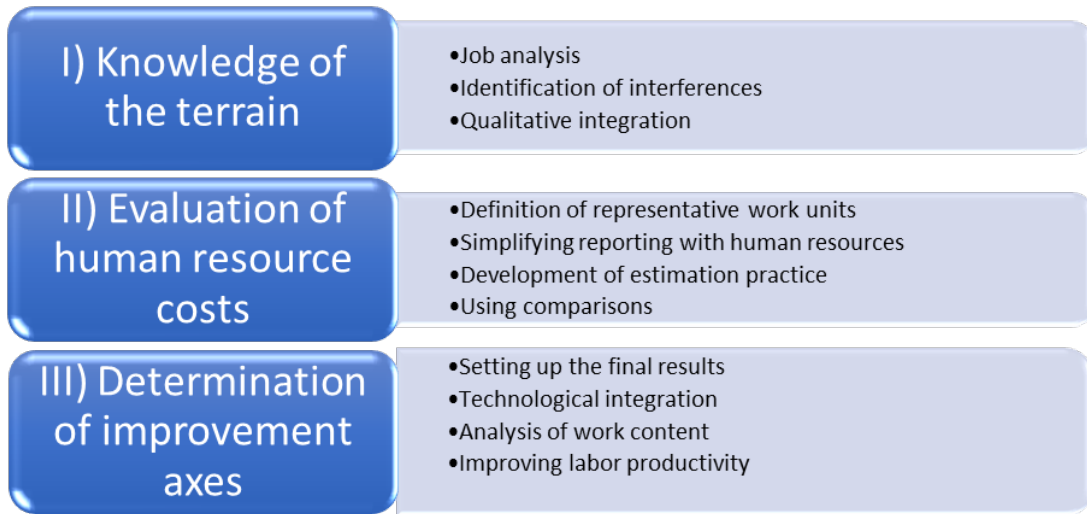


Fig.no. 2 Completing the stages necessary to reduce structural costs in industrial economic entities (own contribution)

I) Field knowledge

Administrative and functional knowledge of the terrain is relatively difficult and logistically limited.

Functional analysis looks at the following:

- ✓ the logical description of the activities provided for in the activity of the industrial economic entity, starting with the description of the job descriptions and ending with the obligations of all employees;
- ✓ analysis of the strengths and weaknesses of the analyzed industrial economic entity;
- ✓ the collection of a significant number of supporting documents, which will ensure, if necessary, the probative force regarding the contractual relations between the clients and the suppliers of the industrial economic entity during the periods of activity necessary to measure their evolution.

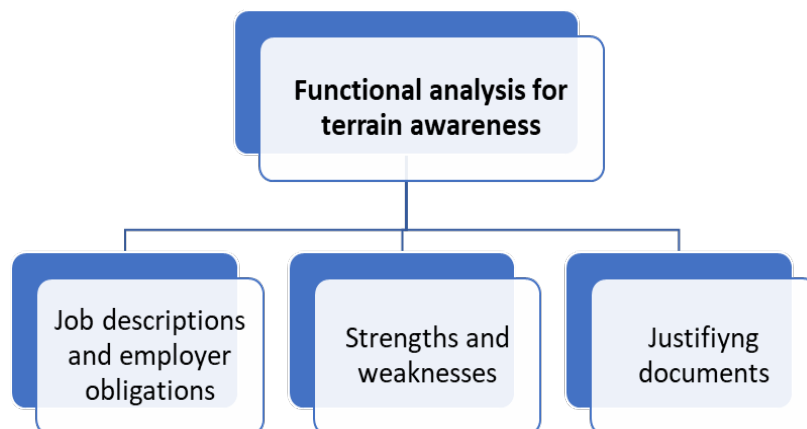


Fig.no. 3 Functional analysis for knowing the land of the industrial economic entity (own concept)

We consider it necessary, timely and useful to use the functional analysis to know the realities on the ground in order to evaluate the costs of human resources in the second stage

and respectively to determine the axes for improving the management of human resources in industrial economic entities.

The functional analysis based on the estimates established in the field are the aim of our scientific research approach "to make the figures considered through the expertise speak".

I thought that a diagnostic study, as a preparatory document, for the maintenance of the interviewed public should be developed and made available to the specialized operational team within the administrative management service, which should not lack: the topic addressed, the objective and the main activities; main customers and suppliers among respondents; self diagnosis; suggestions for action and progress for the future.

Contributors must have their own and permanent confidentiality on their side. The entire action must be based on a "code of conduct" intended for a relationship of trust and discrete, honest, integral and impartial commitment found in all deontological books at national and international level. It is mandatory for all consultants to sign this code of ethics.

2. Content analysis of job descriptions

From the start, the sampling will be established, which includes the number of industrial economic entities engaged in the established functional analysis and the personnel analyzed post par post estimated at a global level of the entire national/regional sample.

The detailed analysis will be carried out by the collaborators in the field and/or in the work stations. 4 work steps will be required for this analysis:

Stage I. Description of duties and functions

In this stage we go through two levels:

- ✓ the first LEVEL – the person in charge of each industrial economic entity analyzed, describes his mission and that of his group, highlighting the strengths and weaknesses of these industrial economic entities. The main tracks of action and progress will be noted in due course.
- ✓ second LEVEL – all collaborators enter the job details, job by job, respectively:
 - for each function analyzed (job description), they collaborate directly to establish the major activities and the purpose of each of the duties.
 - the necessary functions will be specified in order to achieve the intended objectives.
 - the main activities will be identified for each function separately;
 - will be detailed for all activities, all operations necessary for implementation.

Stage II. Identifying the respective relationships

- establishing formal/informal relationships;
- establishing internal/external relations;
- establishing the periodicity of volumes/works;
- the nature and volume of the deliverables are established.

Stage III and IV, it is proposed to formulate here a self-diagnosis regarding progress actions.

Next, to estimate human resources costs, it is necessary to integrate the random elements into the overall score, as follows:

- updating the database regarding the calculation and estimation of human resources costs, including individual pay slips;
- updating daily records;
- preparation of periodic payment procedures;
- the treatment of "overall human resources specialists of industrial economic entities that are part of the human resources cost estimation system";

In order to ensure a faithful image, it is preferred to add to the level of random analysis all information, of any nature, found on all computer media.

Identification of process interfaces in order to reconstruct functional relationships

For functional analysis to be effective, it must be conceptually evolving on an ongoing basis. For example, if cost reduction remains the primary objective, then all operational information highlighting the entire human resource cost management system will help improve resources by strengthening functional relationships through customer-supplier interfaces.

Among the significant functional relationships at the level of industrial economic entities, we can consider that the human resources payment management function can represent for each employee the "sole interlocutor for personnel administration and human resources cost management at the level of economic entities component of the system"! As shown below in figure 4, every employee automatically becomes a potential customer. We identify a significant number of "Deliverables" during each reporting period.

In this case we will have a number of 7 data providers and a minimum number of 8 customers (fig.no. 4).

PAYMENT MANAGEMENT				
PROVIDERS	DELIVERABLE	GESTIUNEA RESURSELOR UMANE (GRU)	DELIVERABLE	CUSTOMERS
RP	CE 1		LP 1	RS
			OP 2	RP
			TB 3	CTB
RU	NC 2		NS 4	RU
////////////////////	////////////////////		////////////////////	////////////////////
I₁				I₂
<ul style="list-style-type: none"> • I_n • I_{fn} • TOTAL I_{fn} 	(I _n -I _{fn})4		BP	<ul style="list-style-type: none"> • RU_{in} • RUI_{fn} • TOTAL
IG	EXP 5		IG 6	EXP
GRU	NWBD 6		GRU 7	NWC

Fig.no. 4. Data providers/clients from the human resource management operating system (edited by Daniel Boeri - Reduire et optimiser les couts, 2012

Next, we explain the meanings of the presentations contained in Fig. no. 4, "Data providers/customers from the human resource management operating system" (edited by Daniel Boeri - Reduire et optimizer les couts - 2012 as follows:

providers

RP = responsible for payments

RU = human resources

I1 = interlocutor 1

in = personal with interlocutor

ifn = personal without interlocutor

iG = management informatics (system)

GRU = human resources management

CE1 = deliverable control and expertise

NC2 = number of nominated customers

INFO1 = daily information
FXP5 = expertise
NWBD6 = New Provider Database

A CUSTOMER

LP1 = deliverable payments
OP2 = payment operators
TB3 = human resource dashboards
NS4 = number of treatments/specializations
DJP5 = customer supporting documents
BP = pay slips
NWC = New Customer Database

Integrating the quality of human resources, respectively the weak points and the strong points in the impact of the general expenses of the structure
Making a true diagnosis regarding the viability and the impact of the quality of human resources on the general structural expenses of industrial economic entities can reach significant values if there will be a good fair and pertinent analysis, respectively mobilizing, of the original ideas rigorously quantified by the factors generating points strengths and weaknesses on the overhead track.

An in-depth case study will exemplify the successful integration of qualitative elements of the nature of strengths and weaknesses across the many influences of dysfunctional factors.

II) The actual evaluation of human resource costs in industrial economic entities under the impact of dysfunctions

The experience accumulated in the evaluation and optimization of the expenses of the structure of general expenses in industrial economic entities demonstrates that, in the absence of an evaluation, respectively a specific estimate, all expenses structured under the ratio of human resources present the great difficulty of measuring/estimating productivity. Obviously, this great deficiency always concerns the process of cost management with human resources in industrial economic entities.

An intermediate solution can always be found in the absence of possibilities to measure/estimate the level of productivity, by choosing some indicators to estimate the costs of human resources.

These representative indicators are in fact "significant ratio packages depending on the specific activity of each industrial economic entity" established as a rule starting from the field and having two origins respectively: to belong to an information - documentation - registration system specific to the industrial economic entity located in this case and has a permanent autopilot system. In principle, specialized practice has demonstrated the good functioning of these autopilot systems both in terms of the quality of the information made available to the beneficiaries and in terms of the correctness of the calculations and the results obtained.

We will mention below some indicators - ratios proposed to be passed on a salary rights payment bulletin (table 1):

Table no. 1. Indicators – ratio for evaluating human resource costs

	NAME	UM	Explanations	Mp
0	1	2	3	4
1	HUMAN RESOURCE OFFICES	mp	Surface	120
2	ACCOUNTING OFFICE	mp	Surface	80
3	ADMINISTRATIVE	mp	Surface	60
4	SALES - COMMERCIAL	mp	Surface	70
5	CALCULATION OF COSTS	mp	Surface	40
6	CASH	mp	Surface	30
7	AUTHORIZATION	mp	Surface	140
8	STORE - RETAIL	mp	Surface	120
9	MAINTENANCE	mp	Surface	200
10	SECRETARIAT	mp	Surface	40
11	LIBRARY	mp	Surface	20
12	WORK PRODUCTIVITY	mp	Surface	30
13	COURIER	mp	Surface	20
14	Total effective	pers.	TOTAL	220
(14)	-DIRECT	pers.	TOTAL	(180)
	-INDIRECT	pers.	TOTAL	(40)
15	DISLOCATIONS	pers.	TOTAL	(6)

Source: processing after Daniel Boeri - Reduire et optimiser les couts, 2012

We recommend the following four tracks to use for HR costing functional analysis respectively:

- ✚ defining the representative work unit for each industrial economic entity;
- ✚ the homogenization of the entire workload for the entire journal volume;
- ✚ dividing the annual workload into balanced sampling to reduce costs and increase labor productivity;
- ✚ the use of benchmarks;

III) Identifying the possibilities for improving the axes of homogenization of human resources management

The following principles are the basis of the proposals to improve the development of human resources management in industrial economic entities. (fig.no.5)

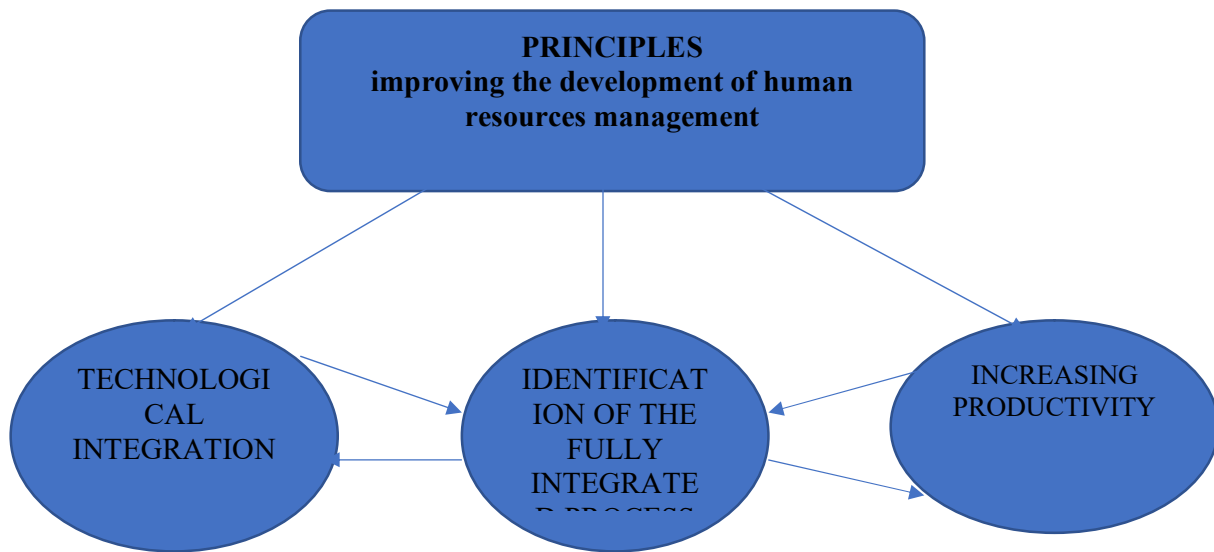


Fig.no. 5. Principles for improving the development of human resources management (own concept)

3. Summary

The field functional analysis still in operation also implements some tasks and their application methodologies considering that the cost reduction operation offers the possibility of substantial complementary quality improvement, at the level of collaborators and customers present in the common platforms.

Obviously the capitalization of the tasks is clear and leads to PROFITABILITY in terms of the work of the entire staff related to motivation. On the other hand, the reduction of costs lead to the superior utilization of human resources through the results obtained.

Therefore, it is agreed to work in:

- ✚ complete units – with deliverables for customers;
- ✚ complete units to allow the establishment of direct links with upstream services, but also with their own colleagues;
- ✚ defining a scoreboard (TB), informational with the results of all personal or collective actions obtained;
- ✚ it is necessary to implement two basic principles: workplace preparation and achievement control (fig.no.6).

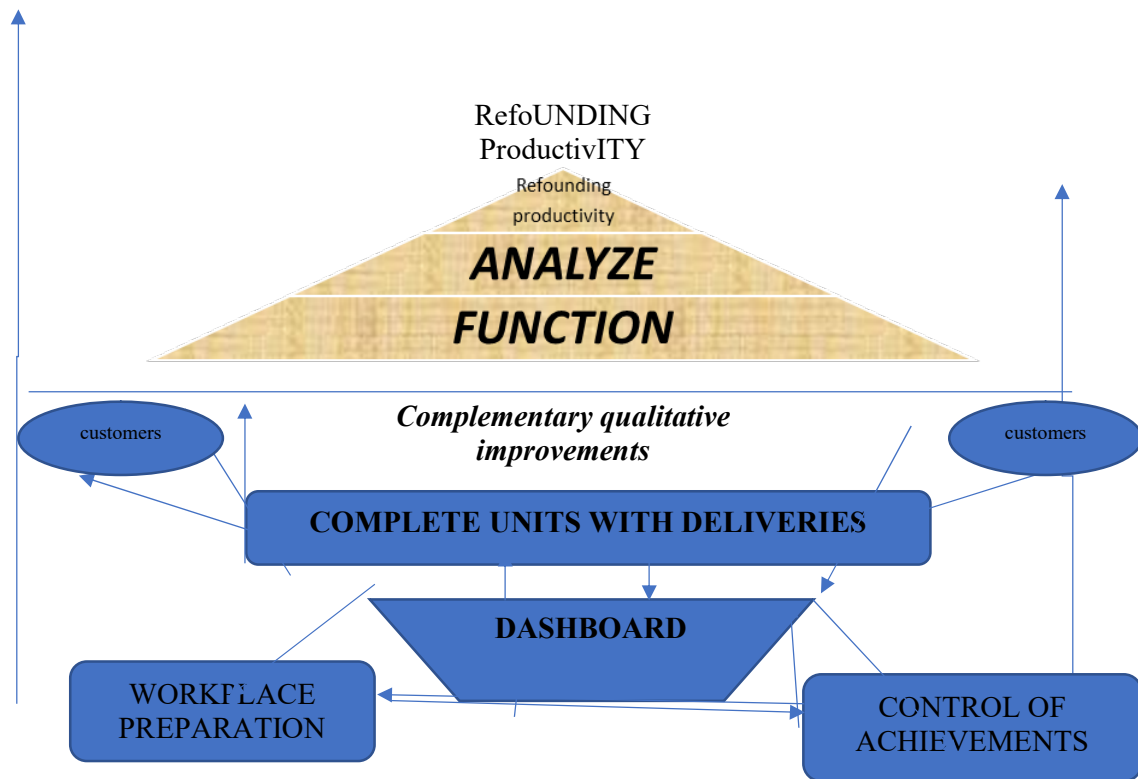


Fig.no. 6. Recapitulative synthesis graph on functional analysis (own conception)

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TRAFFICKING IN MINORS

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***Abstract:** Trafficking in human beings, apart from the very serious way it affects the victims and the social and economic effects it has on society, is also a serious violation of fundamental human rights and other modern concepts such as the rule of law and even democracy. The huge increase in child trafficking in recent years has increased the level of global concern about this scourge. Trafficking in human beings causes significant trauma to the victims, particularly psychological trauma, and the impact is significantly greater for children. In this article, we will discuss some basic and introductory aspects of this phenomenon and all that it entails, with a focus on the existing instruments at international level involved in identifying responses to combat and prevent this scourge, which is the most expansive criminal phenomenon of the present day, with indications that it will overtake even drug trafficking in the coming years.*

***Keywords:** trafficking, minors, The UN Convention on the Rights of the Child.*

***JEL Classification:** J18.*

1. Introduction

Trafficking in human beings or trafficking in human flesh, with various exploitation objectives, is an organised crime phenomenon with serious and particularly serious consequences for the safety, health and fundamental rights of the victims. It is the criminal phenomenon with the greatest exponential growth at present, Romania being both a transit country and a country of origin. The victims of this criminal act are subjected to degrading treatment and are exploited in a slave-like manner.

Data and information made available by various institutions through statistics and other documents at international level, show that the damage caused by these actions is increasing significantly, especially when it comes to children, this component of human trafficking being the fastest growing.

Similar to the situation worldwide, children represent a very high percentage of trafficked persons in Romania. Analysing the studies carried out in recent years, it can be hypothesised that there is a limit to the information available on the trends in child trafficking, especially the internal component, especially after 2007 when Romania became a member of the European Union.

The statistics provided by the National Database of the National Agency against Trafficking in Human Beings show that a better understanding of the phenomenon and its many facets is needed in order to provide the main institutional actors involved in combating the phenomenon with the necessary tools.

2. Legal definition of trafficking of children

According to the Convention on the Rights of the Child, which was adopted by the United Nations (UN) General Assembly, a "child" is "every human being below the age of 18 years unless the law applicable to the child establishes the age of majority below that age" (Law No 272/2004 on the protection of children and the promotion of their rights, Article 4) .

White slavery or trafficking in human beings is defined in several international conventions, including those ratified at national level, as "the recruitment, transportation, transfer, harbouring or receipt of a person, by means of threats, violence or other forms of

coercion, of abduction, of fraud or of deception, abuse of authority or taking advantage of the inability of that person to defend himself or herself or to express his or her wishes, or by giving, receiving or accepting money or other benefits to obtain the consent of a person having control over another person, with the purpose of exploiting that person. Exploitation consists of forced prostitution or other forms of sexual exploitation, forced labour or forced services, slavery or similar practices, servitude, or the removal of organs" (Law No 300/2006 on the ratification of the European Council Convention on Action against Trafficking in Human Beings) .

Thus, the recruitment, transportation, transfer and harbouring, as well as the reception of a child, with the objective of exploitation, are covered by trafficking in human beings, including in situations where the recruiters do not use any of the means described above. In this respect, the recruitment, transportation, transfer, harbouring or receipt of a person between the ages of 0 and 18 years with the objective of exploiting that person is the definition of the offence of trafficking of children.

3. International instruments to combat child trafficking

The UN Convention on the Rights of the Child mentioned in the previous chapter, which was adopted in 1989 and ratified the following year by all the states of the world, including Romania, is still, to this day, one of the main instruments at international level that emphasizes the importance of respecting the fundamental rights of children, where we are talking about: the right to expression, freedom of conscience, protection from violence, both physical and mental, protection from abandonment, neglect, ill-treatment and exploitation, including sexual exploitation, where the convention's objective is to guarantee the social, moral and spiritual well-being of children, as well as their physical and mental health.

The UN Committee that monitors the Convention on the Rights of the Child has issued a recommendation to all States calling for clear measures to be adopted with a view to consistent implementation of its provisions, which consist of: consistent legislation to ensure the protection of children from all forms of exploitation, abuse and trafficking and to criminalise these acts as offences; widespread public information campaigns; provision of resources to implement specific programmes for the protection and assistance of trafficked children, including programmes to train the necessary staff and judicial structures specialising in preventing and combating child abduction and trafficking; the adoption of national strategies based on mechanisms for coordinating and developing these structures and monitoring activities with criminal potential; the implementation of programmes focusing on international cooperation, aimed at exchanging information and breaking up trafficking networks.

Romania also signed the Council of Europe Convention on Action against Trafficking in Human Beings in Warsaw on 16 May 2005, which was ratified by Law 300/2006.

This Convention aims to: prevent and combat trafficking in human beings, with an emphasis on respecting the principle of equality between men and women; guarantee the fundamental rights of victims, providing them with a legal framework that ensures protection and assistance, both for victims and witnesses and, last but not least, ensuring the effectiveness of the criminal justice process; strengthen international cooperation on trafficking in human beings.

Another useful international instrument in the fight against child trafficking is the Convention on Protection against Sexual Exploitation and Sexual Abuse, which Romania signed in 2007. It is the first legal instrument that the Council of Europe has to criminalise various forms of sexual abuse of children, both within the family, where the perpetrator is

one of the parents, using force, threats or other forms of coercion. With this convention, in addition to the classic sexual offences of abuse, child prostitution, child pornography, etc., 'grooming', which refers to the manipulation of children for sexual purposes, was added for the first time.

Raising awareness and educating students about the causes, consequences and signs of human trafficking are important tools to prevent and detect this vicious crime. Efforts to raise awareness among children/adolescents about these characteristics of trafficking are essential in the fight against this global crime. Indeed, prevention through education is recognised as one of the fundamental pillars for suppressing and eradicating child/adolescent trafficking.

4. Trends and challenges in trafficking of children

Trafficking in children is a complex and persistent global problem affecting millions of people around the world. In recent years, the phenomenon has evolved, adapting to social, economic and technological changes. In this article, I will outline the main trends and challenges associated with trafficking of children, highlighting how these dynamics influence efforts to prevent and combat this scourge.

In terms of current trends in this phenomenon, human traffickers have adopted new technologies and the internet to facilitate the recruitment, transportation and exploitation of victims. Social networks, online recruitment platforms and instant messaging applications are used to lure and manipulate victims, making detection and prevention much more difficult for authorities. Moreover, the internet has become a crucial tool used by traffickers to lure, manipulate and exploit victims. Digital technologies, including social networks, messaging platforms and ad sites, facilitate illegal activities and create new challenges for authorities and organisations fighting child trafficking (Annual Report on Child Trafficking in Romania-Study on the Recruitment Process, <http://anitp.mai.gov.ro/>, accessed 16 May 2024).

Traffickers use social media platforms such as Facebook, Instagram, TikTok and Snapchat to identify and approach potential victims. They create fake profiles and use emotional manipulation tactics to gain the trust of young people. Methods may include promises of glamorous careers in modelling, music or other fields attractive to teenagers. Instant messaging platforms such as WhatsApp, Telegram and Kik are used to communicate privately with victims and coordinate illegal activities. These apps offer anonymity and encryption, making it difficult for authorities to monitor and intercept communications.

Another recent trend in the trafficking of children can be seen in migration and humanitarian crises. Armed conflicts, political instability and natural disasters have led to an increase in the number of people vulnerable to trafficking. Refugees and migrants are often easy targets for traffickers, who take advantage of their desperation and lack of legal options to exploit them (Stoica, 2014).

In addition to sexual exploitation, labour exploitation has become a predominant form of trafficking in human beings. Sectors such as agriculture, construction, textiles and care services have recently become frequently associated with abusive working conditions and human trafficking.

Although the phenomenon is often perceived as an international one, human trafficking also takes place within national borders. Traffickers may operate in local communities, exploiting victims in their own countries, complicating efforts to identify and protect victims. This phenomenon is often more difficult to detect and combat because of its local nature.

In terms of challenges in combating trafficking of children, identifying victims is one of the biggest challenges of child trafficking. Many victims are isolated, intimidated or threatened by traffickers, which prevents them from seeking help. Stigma and lack of awareness among the public and authorities can also lead to under-reporting (National Agency Against Trafficking in Persons, 2024)¹.

International cooperation: Trafficking in human beings is a transnational phenomenon that requires close cooperation between states. Legislative, political and cultural differences can complicate efforts to collaborate and coordinate action against traffickers. The lack of a unified legal framework and adequate resources can undermine the effectiveness of global efforts to combat this phenomenon.

Protection and reintegration of victims: Providing protection and support for victims of trafficking is essential to help them recover and reintegrate into society. However, many countries face limited resources and inadequate infrastructure to provide adequate support services. In addition, bureaucracy and complex procedures can delay victims' access to help.

Prevention and education: Preventing human trafficking through education and awareness is a major challenge. A holistic approach involving governments, non-governmental organisations, the private sector and local communities is needed. Awareness-raising campaigns and educational programmes need to be accessible and tailored to reach different vulnerable groups.

Trafficking in human beings remains a serious and complex problem, influenced by multiple contemporary trends and challenges. In order to combat this phenomenon effectively, a multidimensional and coordinated approach is needed, including the identification and protection of victims, prevention through education and awareness-raising, and international cooperation. Only through concerted and sustained efforts can we hope to reduce the devastating impact of human trafficking and build a safer and fairer world for all (Garbulet, 2022).

Child trafficking is a dynamic and adaptable phenomenon, influenced by multiple current trends. The use of technology and the internet, labour exploitation, migration and humanitarian crises as well as internal trafficking are critical issues shaping the current child trafficking landscape. To effectively address these challenges, a coordinated and multidimensional approach is essential, including prevention through education and awareness raising, international collaboration and the use of advanced technologies. It is only through concerted and sustained efforts that we can protect children from this scourge and build a safer and fairer future for all.

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EVALUATION PERSPECTIVES OF SUSTAINABLE REPORTING WITHIN THE BANKING INSTITUTIONS OF THE REPUBLIC OF MOLDOVA

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Abstract. *The importance of expanding the application of sustainability assessment within banking institutions is particularly current internationally considering the continuous increase in the interest of stakeholders and organizations towards non-financial information. The efficiency of the implementation process depends on the capacity to develop national expertise, adopt and adjust the sets of indicators, including the evaluation methodology based on the indicators, emerging from the specific needs of different types of institutions at the national level and the European experience. Sustainability assessment is the basis for expanding complex approaches with a broad scope from the analysis of an institution's impact on the environment to a process of more comprehensive analysis of sustainability in its operational processes as a whole, with the examination of the interdependence between the institution's impact on the environment and the environmental changes on the organization's activity. From the point of view of the obligations assumed by the Republic of Moldova, it is related to facilitating the achievement of the SDGs and the process of taking over the European acquis. The research aims to assess the sustainability of banking institutions in the Republic of Moldova, based on a complex scientific analytical research at the microeconomic level. Research methods used: economic-statistical methods, analytical calculation and quantitative research. Expected results: substantiating the concept of sustainability, identifying its utility for banking institutions in the Republic of Moldova; analysis of methodological and practical aspects of sustainability indicators. The article was developed within the framework of Subprogram 030101 „Strengthening the resilience, competitiveness, and sustainability of the economy of the Republic of Moldova in the context of the accession process to the European Union”, institutional funding.*

Keywords: *sustainable development, banking sector, sustainable indicators, strategies, sustainable management.*

JEL Classification: *G21, Q21.*

1. Introduction

In recent years, sustainability reporting in the banking sector represents a measurement of organizational and informational performance in order to achieve the objective of sustainable development. Therefore, the adoption of the 2030 Agenda and the 17 SDGs by the United Nations General Assembly has given appreciable new impetus to sustainable development worldwide. The SDGs are based on the three dimensions of sustainability and include elements of economic development, social inclusion and sustainable environmental management. Unlike the previous goals – the Millennium Development Goals – the SDGs are universal and address all countries. The European Policy Strategy Center – the Commission's think tank – has pointed out that ignoring these correlations is among the main risks threatening the sustainable future of the EU (ECA, 2019).

Therefore, sustainability reporting is developing in the banking sector and is slowly expanding to other non-banking sectors, or the private sector. In the private sector, various terms are used when referring to sustainability reporting: "non-financial reporting"; "reporting on corporate social responsibility (CSR)"; "environmental, social and governance reporting". This is also part of "extended external reporting" or "integrated reporting". The term used in this study is "sustainability reporting". Thus, the sustainability report is the most frequently encountered form of reporting, but there are other types of reporting used

internationally. The sustainability report, which represents a more complex and comprehensive variant of non-financial reporting, is preferred internationally by reputable companies and those seeking a competitive advantage in the market. This type of reporting follows a series of international frameworks that aim to turn theoretical issues into concrete actions by creating a standardized system for consistent reporting of management systems and performance in terms of environmental, social and governance factors (Ahmad, 2011).

The implementation of sustainability indicators within financial institutions will allow the development and implementation of specific strategies for managing exposures to climate-related risks, all environmental and social aspects on which the projects that a bank finances have a negative impact (Statistica, 2022). At the same time, it also requires a clearer understanding of the environmental impact assessment process generated by policies and lending activity, which allow to identify opportunities to reduce the footprint and support projects and industries that are aligned with the existing major objective both at European level, as well as globally: a future with low carbon emissions.

2. Research methods

In this research, the author analyzes the perspectives of evaluating sustainable reporting within the banking sector, especially in the Republic of Moldova. The choice of studying sustainability indicators in this research is argued by the lack of analytical studies in the given field. In that field, research was carried out within Subprogram 030101 "Strengthening the resilience, competitiveness and sustainability of the economy of the Republic of Moldova in the context of the process of accession to the European Union", institutional funding. As information support, the authors used legislative and normative acts in the field of the banking sector, reports and publications of the National Bank of Moldova. On an international level, important methodological studies have been developed within the UN, the European Commission (EC), the European Environment Agency (EEA), the European Agency for Sustainable Development (ADD), etc., which were taken into account in this research.

To achieve the objectives proposed in the work, the following scientific research methods and tools were used: the documentary method, based on accessing and studying the general and specialized bibliography; the synthesis method, applied to establish the connections between the researched phenomena; the systemic analysis method, through which the main components of the sustainability indicators were researched; the method of quantitative and qualitative analysis.

3. Results and discussion

Climate change can have a significant impact on the financial stability and profitability of companies in the financial-banking system, and implicitly on the economy as a whole. They can affect both economic activities and the natural environment through extreme weather phenomena such as: rising sea and ocean levels, storms, floods and extreme droughts. These events can cause significant damage to companies, customers and communities, with significant economic and social costs. In addition, climate change risks can affect income and expenditure flows and influence investment decisions.

Therefore, the assessment of risks related to climate change and the implementation of appropriate measures to mitigate them are essential elements in the risk management process. These measures include the assessment of the loan and investment portfolio to identify risks associated with climate change, the development of risk management tools and the promotion

of sustainable financing. The risks associated with climate change are assessed and managed within financial institutions from two perspectives:

- at the client level, as part of the environmental and social risk analysis, the impact of the risks associated with climate change on the company's activity and the extent to which its activity affects the environment (emissions in water, air, soil) are analyzed, based on the principle double materiality;

- at the portfolio level, based on a mapping that reflects the environmental and social risks associated with the sectoral distribution of the loan portfolio, the exposure of the portfolio to these risks is analysed.

To manage climate risks, banking and non-banking financial institutions analyze two other important risks:

- Physical risks are determined either by extreme climatic events related to temperature, wind, water (such as floods, hurricanes, fires) or by long-term changes in climate patterns (such as high temperatures maintained over a longer time horizon long term, heat waves, droughts or sea level rise).

- Transition risks arise as a result of measures taken to mitigate the effects of climate change and the transition to a low-carbon economy (such as changes in laws and regulations, litigation due to failure to mitigate or adapt to climate change), as well as changes in supply and demand for certain goods, products and services as a result of changes in consumer behavior and investor demand (Transilvania, 2022).

Commercial banks carry out the analysis of environmental risk factors in any credit application, according to internal models, adapted to the value of the transaction and the degree of risk of the sector. The assessment is done through questions addressed to the client and, as the case may be, collection of additional specific data, his answers being critically evaluated by the ESG credit/risk analyst based on internal rules and the specific guide for environmental, social and governance risk analysis. Internal risk factor assessment models comply with best practices in the field, being built on the basis of IFC performance standards. The internal lending rules foresee the possibility of impacting the client's internal rating following the environmental and social risk analysis carried out.

Following the analysis of environmental and social risks (including climate risk), an E&S risk level is associated with the exposure, which can translate into: additional cash-flow scenarios with impact on the credit decision, impact on the customer's internal rating and, accordingly, in the guarantee level or the price level. The financial institution carries out the mapping of the entire financing and investment portfolio according to the environmental and social risks for each activity sector (such as agriculture, construction, transport, etc.) in order to identify the necessary measures to reduce the potential negative effects of climate change on outstanding credits. This mapping can contribute to the adoption of measures in the lending activity so that the negative impact on the environment decreases, and the positive impact on the environment, but also on society and the communities we are part of, increases its contribution (ECA, European Court of Auditors, 2019).

Banking institutions aim to strengthen the skills of analyzing these risks by allocating specialized resources, such as the team dedicated to environmental experts and the training of credit analysts through courses held by internal experts or external specialists in this field. At the level of the environmental and social risk analysis department, within the Risk Directorate, there is relevant expertise for climate risk analysis (3 out of 5 people have technical studies, including a doctorate in environmental protection). In the last year, sustained efforts were made to raise awareness throughout the organization of the importance of quantifying the potential impact of the risks associated with climate change on the credit

portfolio, through specific trainings for credit analysts, but also for the sales force that interacts directly with customers. In addition to monitoring all the regulations that are or will come into force in the future, commercial banks are actively involved in working groups at national and European level, in order to align with the vision that society has assumed for the future in the Development Objectives Sustainable and the Paris Agreement. The sustainability strategy of financial institutions must include the following information:

- the main tasks in the field of sustainable development, with the indication of the period of their implementation, the description of the business processes for solving these tasks and the corresponding changes; the progress made in addressing these issues and the results achieved;
- key events, achievements and challenges during the reporting period; the impact of trends, risks and sustainable development opportunities on the financial results (financial performance) of the entity;
- setting up a monitoring and evaluation program of the entity's performance indicators arising from sustainable development factors (economic, social, environmental); description of the mechanisms for managing these risks and opportunities, information on how the entity integrates these risks into the general risk management system (Afacerii, 2022).

To create the sustainability report of the banking sector, the relevant indicators are used that describe the (positive and negative) economic, social and environmental impact and the analysis of the activity indicators of commercial banks in the Republic of Moldova in the last five years.

Next, the activity of the banking sector in the Republic of Moldova from the last five years will be analyzed from the perspective of the development of sustainable reporting. Thus, the banking sector has made positive progress over the past 5 years, remaining stable and well capitalized despite external turbulence and conflicts in the region. The degree of concentration of the banking sector remained high during this time frame, and in 2023 it increased significantly, reflecting a banking market dominated by a few major players. This stability and concentration contributed to the resilience and sustainability of the banking sector and to supporting economic growth in the Republic of Moldova.

The asset market concentration index (IHH), rose from 1761.9 points in 2020 to 2006 points at the end of 2023, the level from which the banking sector is considered to be within the limits of a banking market with a high degree of concentration. And according to the value of loans (2184.6 points) compared to that of deposits (2051 points), it indicates a higher concentration (excessively concentrated market) of the banking market of the Republic of Moldova. The ranking of the first four commercial banks, which hold 81.3% of total loans, increased by 2.2% in 2023 compared to 2020. The banking sector shows a higher level of concentration, reflected by the market share according to loans owned by the first four banks in the system, as well as by the Herfindahl-Hirschman index (IHH) calculated by credits. The upward evolution of this indicator shows a continuous increase in the degree of concentration of the domestic banking sector and the increase in competition between banks.

Table 1. Concentration indicators of the banking sector, %

No.	Name of Banks	Market share by asset value (%)				Market share by loan value (%)				Market share by deposit value (%)			
		2020	2021	2022	2023	2020	2021	2022	2023	2020	2021	2022	2023
1	BC "MOLDOVA - AGROINDBANK" S.A.	29,3	31,4	32,8	33,9	34,2	34,9	37,2	37,4	30,0	31,7	33	33,9
2	BC „Moldindconbank” S.A.	20,5	20,6	19,7	20,2	17,9	20,4	20,4	21,9	20,7	21,0	20,3	21,1
3	OTP Bank S.A.	13,8	14,2	14,1	13,9	16,9	16,2	14,1	11,7	14,8	15,0	14,6	14,7
4	B.C. "VICTORIABANK" S.A.	14,8	14,0	14,0	14,1	10,2	9,2	9,3	10,3	15,1	14,3	14,4	13,9
5	B.C. "ProCredit Bank" S.A.	4,8	4,4	4,7	4,2	7,1	6,1	5,8	5,3	3,5	3,6	3,5	3,3
6	B.C. "EXIMBANK" S.A.	4,4	4,1	3,6	3,3	3,6	3,5	3,5	3,4	4,0	3,9	3,5	3,2
7	"FinComBank" S.A.	3,7	3,7	3,8	3,8	3,3	3,1	3,3	3,5	3,6	3,5	3,8	3,8
8	BCR Chişinău S.A.	2,9	2,3	2,4	1,9	2,1	2,0	2,0	1,9	3,1	2,4	2,3	1,9
9	B.C. "ENERGBANK" S.A.	2,8	2,5	2,2	2,1	1,7	1,8	1,7	2,0	2,6	2,4	1,8	1,8
10	B.C. "COMERTBANK" S.A.	1,7	1,7	1,6	1,4	1,9	1,8	1,6	1,6	1,5	1,5	1,5	1,3
11	BC "EuroCreditBank" S.A.	1,3	1,3	1,2	1,1	1,2	1,1	1,0	1,1	1,3	1,2	1,2	1,0
HHI indicator (points)		1761,9	1870,6	1918	2006	1962,2	2049,8	2153,8	2184,6	1832,3	1930,5	1974,7	2051
CR-4 (%) indicator		78,4	80,1	80,5	82,2	79,1	80,7	81	81,3	80,6	82,0	82,3	83,6

Source: Authors' calculations according to data from the National Bank of Moldova (BNM, 2023).

According to the Reports presented by the Ministry of Finance in 2024, among the most active banks - primary dealers, which procured VMS on the primary market during 2023, are the systemic banks: BC "Victoriabank" S.A., BC "EXIMBANK" S.A., BC "Moldindconbank" S.A., and BC "Moldova - Agroindbank" S.A. During the year 2023, the commercial banks in the process of liquidation transferred to the state budget from the capitalization of their assets monetary means in the amount of 102.5 million MDL, of which: "Banca de Economii" S.A. – MDL 69.0 million; BC "Banca Socială" S.A. – 33.0 million MDL, BC "Unibank" S.A. – MDL 0.5 million. On 31.12.2023, the debt of the respective banks in the process of liquidation to the Ministry of Finance amounted to MDL 11,640.4 million, of which: BC "Investprivatbank" S.A. – 350.6 million MDL; "Banca de Economii" S.A. – 7,676.0 million MDL; BC "Banca Socială" S.A. – 1,807.0 million MDL; BC "Unibank" S.A. – MDL 1,806.8 million.

Asset quality and bank bonds. The assets of the banking sector totaled MDL 153,929.6 million on 12/31/2023, increasing by 17.1% compared to 12/31/2022. In 2023, the total amount of risk exposure was MDL 69,969.6 million, increasing by 12.2% f.p.s.a.p. And its share in total assets was 45.5%, down 2 p.p. The share of funds placed with the NBM, which constituted 26.1%, decreased by 2.1 p.p., and the share of banks' investments in state securities and National Bank certificates constituted 19.7%, increasing by 4.5 p.p. Thus, the rest of the assets, which constitute 13.6%, are maintained by banks in other banks, in cash, tangible assets, intangible assets and their share increased by 1.7 p.p. During 2023, only BCR Chisinau S.A. recorded decreases in the value of assets by MDL 128,832.6 million less than in 2022.

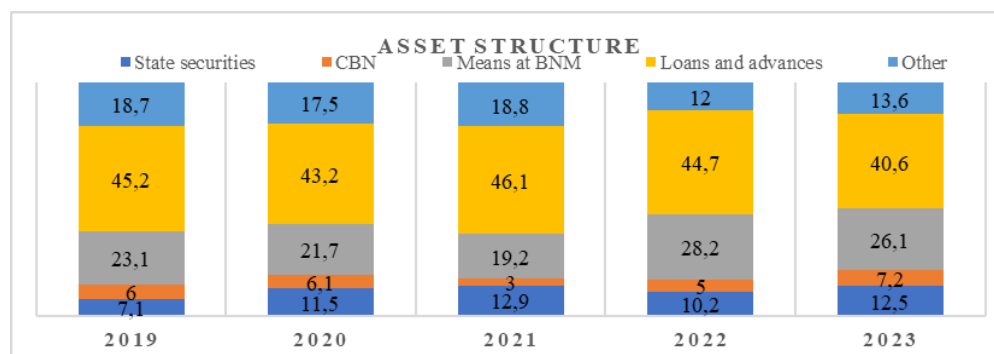


Figure 1. Evolution of bank asset quality

Source: Authors' calculations according to data from the National Bank of Moldova (BNM, 2023).

Three banks can be mentioned as leaders in terms of assets: BC "MOLDOVA - AGROINDBANK" S.A. amount of MDL 52253.5 million, BC "Moldindconbank" S.A. totaling MDL 31059.2 million, followed by BC Victoriabank S.A. with MDL 21740.7 million. By banking sector in 2023, bank bonds totaled 127,287.1 million MDL, with an increase of 18 p.p. f.p.s.a.p. Thus, the top three banks in the bank bonds chapter are: BC "MOLDOVA - AGROINDBANK" S.A. amount of MDL 44490.5 million, BC "Moldindconbank" S.A. totaling MDL 25,447.7 million, followed by OTP Bank S.A. with 18,330.2 million MDL.

Total equity ratio. On 31.12.2023, the level of capitalization for 11 commercial banks in the sector is clearly higher than the minimum imposed by the prudential requirements of 10%, reaching the level of 29.9% (increasing by 0.46 p.p., compared to 2022), which indicates fair operating conditions for local banks. According to the information on the economic and financial activity of commercial banks, at the end of December 2023, the total own funds of the banking sector marked an increase of 14%, up to 20953.9 million MDL compared to 2022. And level 1 own funds (total Tier I capital) increased in December 2023 by 14.5% f.p.s.a.p. up to MDL 20396.5 million. In February 2024, the total own funds constituted MDL 20.4 million and registered an increase of 12% f.p.s.a.p.

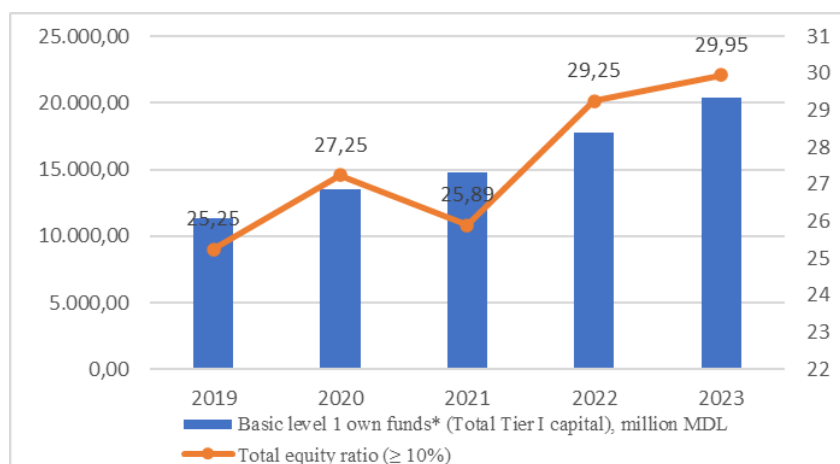


Figure 2. Evolution of the quality of bank capital

Source: Authors' calculations according to data from the National Bank of Moldova (BNM, 2023).

Liquidity reserves. Long-term liquidity, value calculated according to the I principle of liquidity (≤ 1), of the entire banking system was 0.69% in December 2023. Thus, we observe that most commercial banks register a fairly high coefficient, which leads to an excess bank liquidity. Liquidity Principle III, which is the ratio of adjusted effective liquidity to required liquidity in each maturity band and which should not be less than 1 in each maturity band, was also observed by all banks, ranging from 1.48, on the maturity band up to one month inclusive up to 124.33, on the maturity band between one month and 3 months inclusive. The indicator regarding the coverage of the liquidity requirement per sector was 282.3% (limit $\geq 100\%$ - starting from January 1, 2023), varying from 195.5% to 661.6%, decreasing by 46.8 p.p. compared to the end of the previous year.

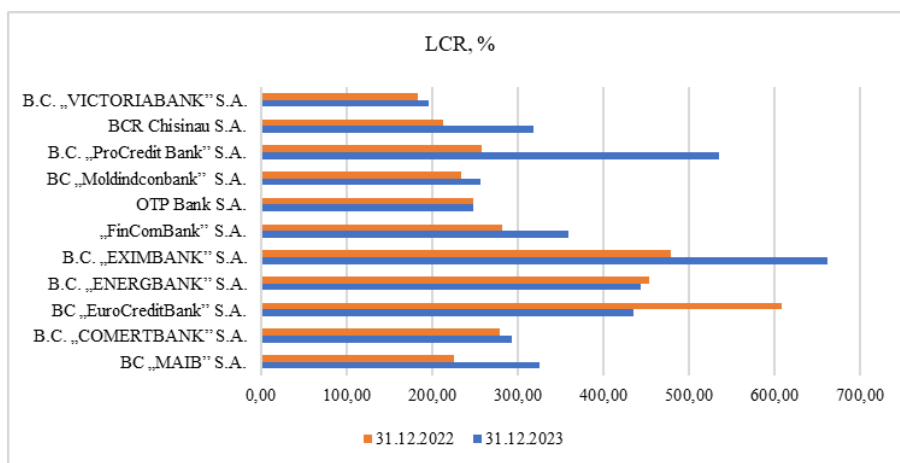


Figure 3. Evolution of quarterly bank liquidity: Principle III - liquidity by maturity bands (>1)
Source: According to the data of the National Bank of Moldova. (BNM, 2023)

Bank profitability. The profitability of commercial banks increased by 12% in December 2023 compared to the similar period of 2022, (the bank profit constituted in December 2023 – 4101.4 million MDL). This increase is due to the main component of the operational activity – interest income by 1829.6 million MDL (19%), income from fees and commissions by 302.8 million MDL (10.1%) and income from differences in exchange rate by 175.5 million MDL (10%). Thus, non-interest related expenses (fees and commission expenses, administrative expenses, provisions, depreciation of financial and non-financial assets, etc.) decreased by MDL 183.2 million (2.2%), but interest expenses increased - with 1977 million MDL (78.2%). Therefore, on 31.12.2023 the values of the main profitability indicators: return on assets and return on capital were 2.8% and 16.2%, respectively, increasing by 0.1 p.p. and 0.7 p.p. respectively. compared to p.s.a.p. The analysis of the contribution of each bank to the formation of the net profit of the banking system reveals that most commercial banks have recorded increases in the values of profits.

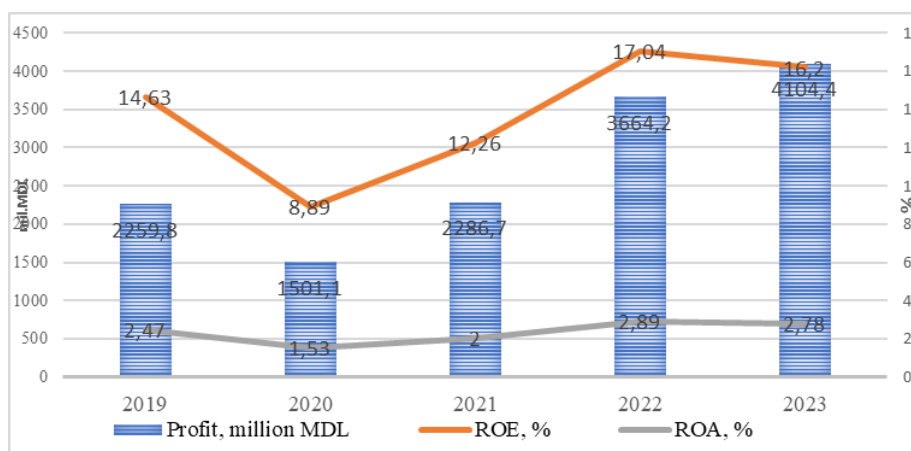


Figure 4. The evolution of banking profitability and profitability
Source: Authors' calculations according to the data of the National Bank of Moldova. (BNM, 2023)

Non-performing loans. In 2023, the share of non-performing loans in total loans decreased by 0.9 p.p. compared to December 2022, constituting 5.5%. The share of non-performing loans in own funds recorded the level of 16.93%, decreasing by 4.65 p.p. compared to

December 2022. That decrease is reflected in the reports of most banks in the system. Overall, this decrease is also due to the cleaning of the banks' balance sheets with the change of the majority shareholder. Therefore, non-performing loans in absolute value decreased by 10.7% to MDL 3547.2 million. Respectively, in 2023, the expired loans increased by 1.6%. And the share of expired loans in total loans was 3.2%, decreasing by 0.1 p.p., f.p.s.a.p., varying from 1.6% to 5.4%, depending on the commercial bank.

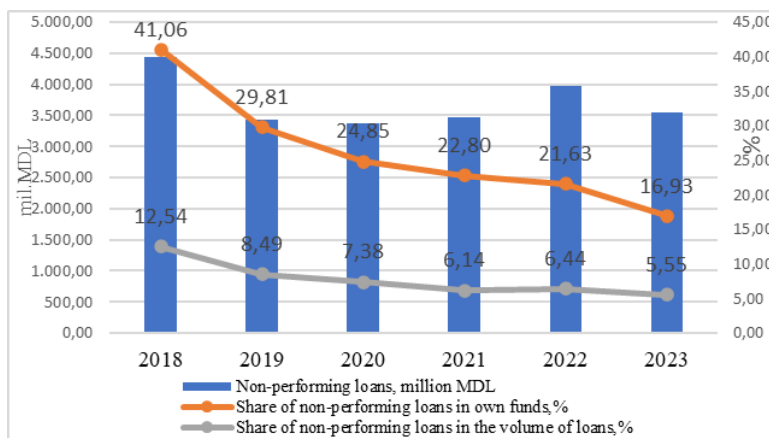


Figure 5. Evolution of non-performing loans in the banking sector

Source: According to the data of the National Bank of Moldova. (BNM, 2023)

Loan portfolio increase by 4% in 2023 f.p.s.a.p. On 31.12.2023, the total balance of loans was 64 billion MDL, increasing by 4% f.p.s.a.p. or with the largest weights are held by the portfolio of consumer loans with a weight of 12% or MDL 11 billion, followed by loans granted for the procurement and construction of real estate with a weight of 26.6% or MDL 978 million and loans granted for the purchase of real estate with a weight of 8.1%. During the year 2023, a total of 81,977 loans were granted, of which: 14,005 consumer loans, 3,451 loans granted to administrative-territorial units, 453 loans for the procurement/construction of real estate and 301 loans granted to trade. During this period, there were granted 201 credits to agriculture in the amount of 4521.7 million MDL, 174 credits granted to natural persons practicing activity, 92 credits granted in the field of transport, telecommunications and network development, 67 credits granted to productive industry, 51 credits granted in the field of constructions and 14 loans to the non-banking financial environment in the amount of MDL 2757.5 million. The volume of new loans granted at the end of December 2023 amounted to 5479.7 million MDL, 25.16% more than in December 2022 (4378.2 million MDL). Respectively, 4076.3 million MDL were granted in national currency and 1342.8 million MDL in foreign currency, at the same time 60.5 million MDL were granted credits attached to the exchange rate (INCE, 2023).

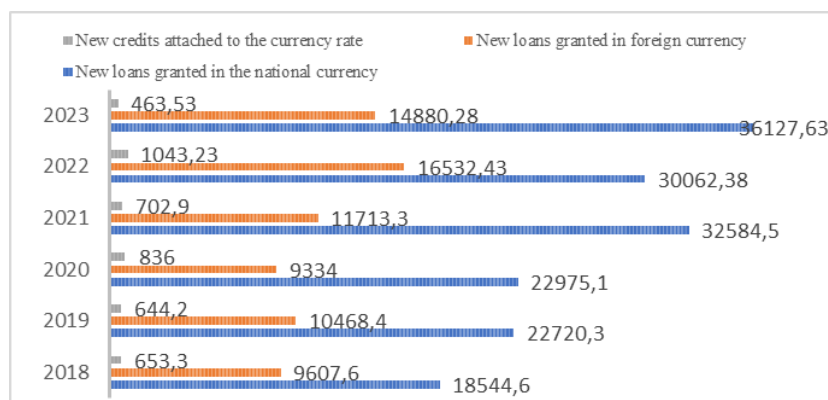


Figure 6. The volume of new loans granted by currency, million MDL

Source: According to the data of the National Bank of Moldova, (BNM, 2023)

Of the total credit balance, 25.8% are in foreign currency, a decreasing percentage compared to the similar period of 2022, when the share was 30.5%. In the case of the population, the balance reached MDL 25.3 billion, increasing by 9% f.p.s.a.p. As for the companies, the balance of loans increased by 0.6% in the targeted period, and amounted to 38.5 billion MDL. The annual growth rate of loans granted in the national currency in the last two quarters of 2023 increased slightly and the share of loans in foreign currency decreased.

Increase in the balance of deposits attracted in 2023 by 20% compared to 2022. In 2023, the balance of deposits attracted both in national currency and in foreign currency amounted to MDL 113 billion on 12.31.2023, increasing by 20% compared to 12.31. .2022. Of the total deposits, 63.1% were MDL deposits, totaling 71 billion MDL as of 12/31/2023. Deposits in foreign currency constituted 37% of the total deposits, making up 42 billion MDL. A significant impact on the increase in the balance of deposits was the increase of deposits of legal entities by 30% and deposits of natural persons by 14% in December 2023 f.p.s.a.p. Deposits in national currency increased by 26%, and in foreign currency they increased by 10.6% in 2023. Regarding the volume of new deposits attracted, it was 5924.56 million MDL at the end of December 2023, decreasing by 12% f.p.s.a.p. New deposits attracted in national currency constituted 3644.61 million MDL and in foreign currency - 2279.95 million MDL.

Following the analysis performed, the process by which the main indicators for the material themes are identified, themes that constitute the basis for sustainability reporting, is represented. Material themes are those themes that reflect the impact (positive and negative) on the economy, society and environment, including human rights, generated by the banks' activities and business relationships. In order to manage the direct and indirect impact that banking institutions' activity has on the natural environment, commercial banks have a permanent, independent advisory body in order to monitor, manage and develop the bank's policies in areas related to energy efficiency, Bio-agriculture and ecology - called the Green Council. It is composed of members of the Administrative Council (Transilvania Bank, 2022). The purpose of the Green Council is to identify, establish and develop the bank's policies, dealing with the manner in which it develops the agenda of activities in the following areas:

- energy/renewable resources;
- energy efficiency;
- waste management;
- ecology;

➤ sustainable agriculture.

The analysis and implementation of the sustainability report is the attraction of sustainable financing for any entity. Thus, one of the most important benefits of sustainable financing is that it gives investors the tools they need to support companies and projects that prioritize sustainability. This approach guarantees that investments are directed to companies and projects that respect the principles of sustainability, which can lead to improved risk management, better financial performance, increased positive impact on society and the natural environment, and reduced negative impact. (Sustainability and The Role of The Management Accountant., 2011).

Financing with a sustainability component supports companies in achieving their sustainability goals by providing the capital to implement sustainable policies and technologies. It also promotes greater transparency and accountability, which can help increase and maintain trust in financial systems and reduce the likelihood of financial crises.

Providing capital for sustainable projects is also instrumental in achieving the United Nations' Sustainable Development Goals (SDGs), which seek to address global issues such as poverty reduction, climate action, gender equality and access to clean water and energy. The goals, through their proposed targets and indicators, provide a framework for sustainable development that is essential for the well-being of people and the planet.

4. Conclusions

Durability is measured by evaluating the total performance of the three main principles, especially a balanced treatment of all three. These three key principles of the triple bottom line do not provide a system for measuring them, but recent sustainability measurement methods have attempted to measure sustainability through them. Although there are no official universal measurements of sustainability, many organizations are developing industry-specific tools and practices to judge how social, environmental and economic principles work as part of a company.

In our opinion, the disadvantage of sustainable reporting at the current stage is the fragmented character and the incomplete and uneven presentation of information, which makes it impossible to compare them. Also, the descriptive format of information prevails in these reports. The development of sustainable reporting standards to solve the identified problems.

Consequently, the impact of the change in the requirements regarding the presentation and reporting of information will materialize in more responsible decisions in conditions of economic instability and a dynamic economic environment; a more transparent information environment. All these aspects will allow the evaluation of the non-financial performance, known as the entity's sustainable performance.

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STRATEGIC OBJECTIVES AT THE LEVEL OF BRĂILA CITY HALL

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Abstract: Strategic planning is a systematic and complex process aimed at a sustainable future. The present work has as its starting point the general objective outlined by the "Strategy for the consolidation of administrative capacities, respectively: Increasing coherence; increasing efficiency; increasing predictability; increasing transparency. The decision-making process at the level of local public administration, in order to fundamentally and coherently respond to the needs of local communities, by introducing the public policy approach in the decision-making process.

Keywords: objective, program expected results, risks.

JEL Classification: G21.

1. Introduction

The objective of strategic planning is to create controlled change. It is about three things:

- to prepare for the inevitable;
- to solve unwanted things;
- to control what can be controlled.

Any organization has customers and not necessarily people who pay for a certain thing. Hospitals call them patients, government departments call them taxpayers or beneficiaries of services. Customers have needs and desires and, to be effective, an organization is not enough to respond to these needs and desires, but must also be able to observe how they evolve.

Strategic planning also means knowing your strengths:

- what are the things you do well;
- what makes you different;
- what are the things for which people want access to your products and services.

But it also means identifying and acknowledging your weaknesses:

- what are the things you don't do well enough, why you don't attract customers;
- what are the things you do that are not at least as good as those of the competition;
- what of what you do is risky or highly influenced by change?

The strategic planning process leads to identification, decisions.

Strategic planning talks about the direction, where the decisions should go, how to get advantages from the strengths and how to apply them. It has nothing to do with forecasting. We are not talking about guessing the future, no one can do that. But it's about looking for trends, opportunities, changes. We are not talking about blindly following a plan, but about continuous assessment of the situation and about unpredictable approaches.

2. Strategic objectives at the level of the Brăila City Hall

2.1. The general objective

The general objective established at the Brăila City Hall level is to strengthen the administrative capacity of the Brăila City Hall, by simultaneously increasing the quality of public services provided to the population and institutional efficiency both in terms of managing economic resources and in terms of improving administrative-territorial management .

2.2. Strategic objectives

O.S.1: An efficient, modern public administration oriented towards the needs of citizens and the business environment. Within this objective, the implementation of some institutional measures to remove the weak points identified following the application of the perceptive questionnaires at the level of Brăila City Hall personnel is considered. In this case, an efficient public administration involves reducing reaction times to the needs of citizens and the business environment, which can be achieved by improving communication within the institution, especially in terms of interdepartmental communication, by simplifying and streamlining work flows, and by simplifying and streamlining work flows, and by balancing the volume of activity in areas where staff are overcrowded.

O.S 2: Improved working conditions, supported by a modern infrastructure, capable of managing the transition to the "smart city"

Within this objective, the adoption of those investment measures to remove the discomfort felt by the employees of the Brăila City Hall regarding the working conditions and the existing infrastructure at the level of the institution is considered. Thus, both the aspect related to the improvement of working conditions and the aspect related to the optimization of the information system are targeted, so as to create an informational infrastructure that is easy to use, quickly accessible and capable of ensuring the full functionality of the local public administration's efforts to make the transition to the smart-city concept.

O.S 3: 0 public administration closer to citizens, inclusive, sporty and participative

Here the development of the skills and competences of the Brăila City Hall is considered to adapt to a changing society, to show increased empathy towards the needs of citizens and to satisfy their legitimate expectations at a level of depth as possible. The objective equally aims at increased facilities for people exposed to the risk of social exclusion, vulnerable people and those who show the desire to be involved in solving community problems

3. Institutional programs

Each strategic objective corresponds to one or more institutional programs, which found their equivalent in the budget programs as follows:

Institutional/budgetary programs assimilated OS 1

Program 1: Simplifying and streamlining work flows The program aims at a set of measures aimed at optimizing the performance times of certain activities specific to the administrative process

Expected results:

- reduction of response times to citizens' requests;
- increasing the level of satisfaction of citizens;
- reducing the level of employee dissatisfaction;
- improving management;

- ensuring an improved traceability of the documents, actions and decisions adopted at the level of the Brăila City Hall.

Risks:

- resistance to change;
- the impossibility of establishing unitary monitoring measures.

Program 2: Improving interdepartmental communication and balancing tasks

The program aims at a set of measures aimed at strengthening responsibility and mutual trust between employees.

Expected results:

- increasing the level of trust between employees;
- the disappearance of conflictual and anticollective attitudes;
- strengthening team spirit and a constructive attitude towards work;
- optimization of communication relations between the institution's departments in order to coordinate public policies and strategies.

Risks:

- lack of sufficient time resources;
- instability propagated from the external environment.

Institutional/budgetary programs assimilated OS 2

Program 3: Improvement of the infrastructure and the conditions for carrying out the activity of the staff.

Aims at ensuring optimal working conditions for staff, including work spaces, workplace ergonomics, hygiene conditions, etc.

Expected results increase in staff performance:

- reducing the level of dissatisfaction;
- increasing the attractiveness of the institution;
- reducing staff turnover;
- reducing the occurrence of occupational diseases;
- cost reduction in the medium and long term.

Risks:

- lack of sufficient resources;
- the limited range of options for reorganizing the space;

Program 4: Information and digitization of public administration as a necessary precondition for the transition to smart-city

It aims to continue the steps taken to facilitate the transition to smart-city

Expected results:

- the configuration of a high-performance, secure, fast hardware and software infrastructure that can support public services provided online in optimal conditions;
- expanding the number and complexity of specific services;
- increasing the degree of satisfaction of the population;
- reduction of waiting times;
- reducing dependence on a certain type of operating program.

Risks:

- lack of sufficient resources;
- the long familiarization time with the services provided in the electronic environment;
- the reluctance of certain categories of staff;

Institutional/budget programs assimilated OS3

Program 5: Development of staff skills and competencies

It aims to continue the efforts undertaken to maintain a high level of qualification for the employed staff.

Expected results:

- trained staff with multiple skills;
- more efficient staff;
- improving communication with citizens;
- reduction of waiting times.

risks

- the impossibility of including all employees in the training programs
- the instability of the legislative framework

Program 6: Creating facilities for an inclusive and participatory public administration

Aims at designing a set of measures through which disadvantaged groups, vulnerable groups, have equal and undifferentiated access to public services provided

Expected results:

- creating a strong local community;
- increasing the degree of satisfaction;
- improving communication;
- reduction of waiting times
- guaranteeing non-discriminatory access to any public service.

Risks:

- the possibility of the emergence of potential conflict situations of ideological origin;
- delaying the adoption of certain decisions with an impact on the community.

Measures represents an ongoing function of the institution or a long-term commitment or intervention to which the institution undertakes to reform and improve the implementation of policies. A measure is constituted by a group of activities and/or projects that support the respective policy. The results of the budget programs are obtained through the implementation of the measures. In general, a program must include at least two measures.

The number of measures within each program varies depending on its complexity.

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THE FINANCIAL INDICATORS OF THE POPULATION, THE BASIC PILLAR OF SOCIETAL SUSTAINABILITY AT THE NATIONAL LEVEL (II)

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Abstract: According to European regulations, as well as according to the methodology for the allocation of European funds at the regional level, the financial indicators of the population of the member states are reference indicators regarding the sizing of the amounts related to the funds included in the Multiannual Financial Framework and with the direct objective of defining "investments for the employment of work and economic growth". The essential objective of the study and perspective consists in establishing the basic pillars of the concentrated picture of the financial indicators of the population, in terms of the achieved values of the primary indicators, based on which five relevant relative indicators were calculated that characterize the financial condition of the population, which influence in directly the potential and performance of the national economy. The research methodology in the work is based on conceptual definitions, as well as calculation formulas of the primary indicators, respectively of the derived indicators, calculated for the period 2007-2022. In the paper we will present the results of the study, namely the calculation of the primary indicators for a series of 2007-2022 data, and the novelty element of this paper is given by the definition and calculation of some derived indicators that reflect the current financial state of the population at national level, basic pillar of societal sustainability. Furthermore, the creation of a graphically and descriptively represented image, with multi-year coverage (2007-2022), of the evolution of the financial indicators of the population lead us to the conclusions of the established theme.

Keywords: finance, population, sustainability.

JEL Classification: F65, J11, Q56.

1. Introduction

The purpose of this research is to create a graphically represented image of the evolution of the financial indicators of the population in the period 2007-2022. As for the objectives, they are adapted annually to explore and follow the possibilities of development and moving to new stages, capitalizing on the results accumulated by calculating the indicators finances of the population in the previous periods of the study.

The main objective consists in establishing the basic pillars of the concentrated table of financial indicators of the population in terms of the achieved values of the absolute primary indicators, based on which 16 relevant relative indicators were calculated that characterize the financial condition of the population, and which directly influence the potential and the performance of the national economy.

The harmonization of data only for the year 2021 was given by the fact that for the year 2022, the available data necessary for the calculation of the derived indicators stops at quarter III inclusive (for part of the primary indicators), many of which are being centralized at the level of public institutions, therefore some of the primary indicators were not identified as being reported at the level of the institutions mentioned in the study. Therefore, we calculated only those derived indicators for which we identified primary indicators reported at the end of 2021. Display quotations of over 40 words, or as needed.

Literature review

The sustainability of society at the national level is a multidimensional concept that encompasses economic, social, and environmental aspects. One of the critical components of

societal sustainability is the financial well-being of the population. Financial indicators play a critical role in determining the overall health of a nation's economy and the well-being of its citizens. This literature review aims to explore existing research on population-level financial indicators, their importance in assessing societal sustainability, and their impact on the overall development of a nation. Among these indicators identified in the specialized scientific literature are: 1. Financial indicators and economic health: a) Income and wealth inequality: The level of income and wealth inequality in a society has profound implications for the sustainability of society. Studies have shown that high levels of inequality can impede economic growth, exacerbate social tensions, and lead to negative health and education outcomes for less privileged sections of the population (Piketty, 2014; Stiglitz, 2012). b) financial inclusion and access to services: financial inclusion refers to the extent to which individuals and businesses can access financial services. It is a crucial factor in promoting economic growth and reducing poverty. Research indicates that improving financial inclusion has a positive impact on income distribution and increases opportunities for upward social mobility (World Bank, 2017). 2. Financial indicators and social welfare: a) Household debt and financial stress: the level of household debt and financial stress can have a significant impact on the well-being of a population. High levels of household debt have been linked to increased rates of mental health problems and reduced ability to invest in education and health (Bridges & Disney, 2010; Drenea & Lavrakas, 2000). b) Preparing for retirement: Financial preparation for retirement is essential to ensure long-term social sustainability. Studies have highlighted the importance of pension systems and retirement savings in ensuring financial independence in old age (Barr & Diamond, 2009; Lusardi & Mitchell, 2011). 3. Financial indicators and environmental sustainability: a) Sustainable investment and green finance: The concept of sustainable investment and green finance has gained prominence in recent years. b) financial indicators related to environmentally responsible investments can influence a nation's environmental policies and practices (Scholtens & Kang, 2018). 4. Financial literacy and education: a) Financial literacy and decision-making: Financial literacy is essential for individuals to make informed financial decisions. Research has indicated that improving financial literacy can lead to better financial planning, debt reduction, and increased savings rates (Lusardi & Tufano, 2015; Van Rooij et al., 2011). b) Financial Education Initiatives: Various financial education initiatives have been implemented in different countries to improve financial literacy. Evaluating the effectiveness of such initiatives is crucial for understanding their impact on societal sustainability (Fernandes et al., 2014; Hastings et al., 2013). This literature review underlines the importance of financial indicators as a fundamental pillar of societal sustainability at the national level. Moreover, we emphasize the complex relationship between financial indicators, economic health, social well-being, and environmental sustainability. To promote sustainable development, policymakers must prioritize initiatives that promote financial inclusion, reduce income inequality, and increase education and financial literacy. Furthermore, further research is needed to explore the dynamic nature of financial indicators and their role in ensuring a more sustainable and equitable future for nations and their populations. Within the primary and derived indicators presented in this work, we wanted to develop based on the research methodology addressed, and to propose a set of own derived indicators that show the state of the population indicators at the level of a state (in our case Romania), being able to be approached at the level of any other state, and which otherwise constitute the multiplying effect of the results of our work.

2. Materials and research method

In the work, the primary indicators are calculated and based on them, the derived indicators are calculated, the influencing factors of the financial status of the population at the national and European level.

Regarding the primary indicators, in the years 2021-2022, years of "recovery" after the pandemic, the primary indicators mainly recorded higher values compared to 2020 (pandemic year), for some of the indicators (financial assets, income and expenses of the population, gross disposable income of the population, saving, financial debt or GDP). There are also indicators with values lower than the year 2020, namely financial investments of the population, Population, Interest rate collected (on deposits) or Interest rate paid (on loans) if we refer to the year 2021. The primary data identified were sourced from the databases of the National Bank of Romania (from the National Financial Accounts 2007 - 2021 and the monthly bulletins from the period 2007 - 2023) and the National Institute of Statistics (Statistical Yearbook of Romania, editions 2007 - 2022, Monthly Statistical Bulletin from the period 2007 - 2023, Press Releases).

As for the derived indicators, for the year 2022, since most of the reported data are only available up to the level of the third quarter inclusive, we calculated eight indicators, of which four had lower values than in 2021, respectively four, higher values.

The achieved values of the absolute primary indicators, based on which the 16 relevant relative indicators that characterize the financial status of the population, for the years of the analyzed period, were calculated, are presented in the table below (Table 1). It should be specified that the values of the indicators for the year 2022 are provisional data, they will be revised during 2023. Therefore, according to the Table mentioned above, in the years 2021-2022, years of "return" after the pandemic, the primary indicators recorded mainly higher values compared to 2020 (pandemic year) for some of the indicators (financial assets, income and expenditure of the population, gross disposable income of the population, saving, financial debts or GDP). There are also indicators with values lower than the year 2020, namely financial investments of the population, Population, Interest rate collected (on deposits) or Interest rate paid (on loans) if we refer to the year 2021.

The financial assets of households have a weight of 79.9% in relation to GDP; if we look at the financial assets by instruments, we notice that in 2021 the availability of cash and deposits predominates, but also participations and shares/fund units (increasing compared to 2020), potential causes being the improvement of the degree of digitization in the financial market and the increase stock market indices from 2021, combined with the strengthening of the population's confidence in the capital market (purchases of new fund units outstripped redemptions). Also, economic growth, salary increases, and capital market performance led to an increase in receivables from the insurance, pension and standardized guarantee systems financial instrument category compared to the previous year.

In 2022, the total indebtedness of the population continued its upward trend, but at a less alert pace than in the previous year, amid recent developments regarding high interest rates and increased uncertainty regarding economic developments. In structure, bank loans represent the most important component of the population's indebtedness, highlighting mortgage and reference consumer loans, loans granted by non-bank financial institutions, newly granted loans by non-bank financial institutions show a similar evolution.

Table 1. The evolution of the primary indicators regarding the characterization of the financial status of the population in the period 2007 – 2022

Indicator	UM	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
AFP s	mil.lei	410503	413696	334346	337052	349705	416456	538323	641026	675641	720233	770649	738759	919817	1091953	1206081	n/a
AFP f	mil.lei	32457	144882	-8349	25885	70943	83271	103083	20327	137318	44592	50416	-31890	181058	172136	114128	n/a
AFE f	mil.lei	291730	331335	148074	126276	197748	159740	89456	16902	46308	110372	82474	64146	320653	336813	325088	n/a
ALC s	mil.lei	78920	97462	109002	117502	129722	137460	149317	161737	176782	202739	222592	239304	272803	309599	339919	n/a
CHB	mil.lei	136480	143443	153427	154003	158928	165379	173291	183398	209825	254450	263114	347072	392497	419280	475834	548487
CHD	mil.lei	8766	12890	12078	10544	10367	8665	8068	6660	6147	6379	7241	7531	9767	9341	10896	10177
CNE f	mil.lei	-49277	-55186	-23108	-18155	-28041	-8334	7471	13488	14683	-4096	-17518	-14515	-10492	-17101	-22052	n/a
CNP f	mil.lei	8701	13650	21321	32435	26139	46223	90559	16106	11800	64151	-22287	25056	26135	28901	-35731	n/a
CRP s	mil.lei	80460	113589	116452	120195	121578	122628	122130	120513	107953	113037	114283	119436	160000	149 878	177500	171 488
CTP s	mil.lei	410503	413698	334345	290620	313666	370742	461740	493591	516051	563012	584969	624747	680974	653735	674655	680929
DTP s	mil.lei	101479	137544	137835	151112	158433	163460	165072	161484	151870	189838	205594	219986	233185	n/a	265831	267293
DEP s	mil.lei	64990	80518	94930	105388	113068	123595	132287	139559	146780	163462	178660	241686	222399	256 680	283869	398408
ECP s	mil.lei	281719	268151	267400	258937	275787	329856	412876	436677	456547	499919	530414	534176	532039	614505	634000	653020
FBP	mil.lei	8284	9284	9625	29886	30836	33345	35348	34333	35206	34044	36053	37098	36913	35621	37045	42343
IFV f	mil.lei	9808	12257	4163	15413	17625	40629	84756	19767	9420	9919	10207	11197	10525	13800	11790	11672
IPF	mil.lei	236389	220124	245714	133568	130908	163880	157090	139319	133049	123137	155152	192389	236638	242554	245950	268086
IVF f	mil.lei	27248	37814	26599	23217	25049	19325	7155	1101	7987	58169	55870	41954	48223	23855	36531	41217
PFE f	mil.lei	211552	156639	90358	75978	102196	77445	99516	25177	46989	151464	71223	22234	36949	-29572	31805	24644
PPP f	mil.lei	29592	28140	-1738	-4442	1478	563	665	2556	6674	14429	12191	15739	13339	41278	6088	7902
PIB	mil.lei	416007	514007	501139	533881	565097	595367	637456	668590	712588	765135	856727	940478	1059803	1066781	1187402	1412457
POP	mii	22562	22542	22516	22481	22434	22391	22346	22298	22242	22223	22215	22197	22175	22089	21980,5	21943
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	6,83	6,63	7,07
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	1,82	1,58	1,95
VDB	mil.lei	251208	330147	313038	321980	324227	336621	448548	470408	426795	434358	492590	611554	678564	662539	701969	n/a
VBP	mil.lei	200549	265161	279977	276993	257552	171336	180202	250692	239711	296852	310832	400611	458224	500856	553117	628798

Source: the databases of the National Bank of Romania (from the National Financial Accounts 2007 - 2021 and the monthly bulletins from the period 2007 - 2023) and the National Institute of Statistics (Statistical Yearbook of Romania, editions 2007 - 2022, Monthly Statistical Bulletin, 2007 - 2023, Press releases), Report on financial stability, 2007-2022 editions, NBR, Bucharest, Romania (NBR, 2007-2022)], (NIS, 2007-2022), (NBR, 2007-2022) (CCFM, 2017)

In addition to the reference studies at the level of specialized academic institutions, for the construction of the relevant relative indicators selected for the purpose of evaluating the financial status of the population, for the period 2007 – 2021, 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: the financial assets available to the population at a given moment, regardless of nature, maturity, degree of risk and forms of ownership; it is also called the financial wealth of the population; it is both a flow and a stock indicator, representing the claims of the population in the form of bank investments, IPB, or financial investments, IPF, that is, cash, demand deposits, time deposits, short-term securities, long-term securities, credits, etc.;

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

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

CHD = Interest expenses: expresses the financial expenses made annually by the population for interest payments

CNE = The net financing capacity of the economy, the set of resident sectors, positive or negative (financing required): represents the net financing capacity of the economy, as the difference between the set of financial assets, the financial claims of the resident sectors, and the set of their financial liabilities, the difference can be, as a rule, positive, but sometimes also negative, signifying a need to finance the economy.

CNP = The population's net financing capacity, positive or negative (financing required): represents the population's net financing capacity, as the difference between the population's financial assets, financial claims, and its financial debts, the difference being, as a rule, positive, but sometimes also negative, signifying a need for population financing.

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

CTP = Total financial claims of the population: financial savings, total financial claims 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: the 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 claims of the population (CTP).

FBP = Gross fixed capital formation of the population represents the value of durable goods intended for purposes other than consumption, utilitarian, with a certain value, acquired by the population, as a rule, through investments, to be used for a duration 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, carried out over a period of one year, meaning the purchase of banking and financial saving instruments.

IPF = Investments on 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 over a period of one year, meaning payments for the purchase of durable goods, with a life span of more than one year.

IVT = Total investments of the population: total investments of the population, carried out over a period of one year (IVF + IFV)

PFE = Total financial liabilities, commitments, debts of the institutional sectors of the economy, according to SCN, overall, 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 moment, regardless of nature, maturity, degree of risk and forms of ownership; it is also called the financial debt of the population; it is both a flow and stock indicator, representing the commitments, debts of the population in the form of liquid, short, medium, and long-term, banking, and non-banking debts.

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

POP = Population: a group of individuals brought together by ties of citizenship and by establishing domicile on the territory of the state, in relation to which the latter exercises its sovereign power over the entire data set from which a sample is selected and in relation to 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 = Rate of interest collected (on deposits), which expresses the interest rate collected by the population on savings instruments, such as bank deposits, purchased financial securities, etc.

Rdp = Rate of interest paid (on loans) which expresses the interest rate paid by the population for loans taken out, such as bank loans.

VBP = Monetary income of the population: the total monetary income obtained by the population, for periods of one year, from any available source, such as monetary income, but also other liquidities 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 available to the population for final consumption and gross economy (from which financial saving is achieved).

However, to be able to understand each of the derived indicators, we consider the sheets of relevant indicators for the population as relevant as presented below.

(1) Indicator 1

1. Section: I. Financial macroeconomics.

2. Name: Financial savings rate of the population.

3. Symbol: Ref.

4. Degree of synthesis: derivative indicator.

5. Data source: Financial Accounts – BNR and Statistical Yearbook.

6. Calculation formula:

$$\text{Ref} = \text{ECF} / \text{GDP} \times 100 \quad (1)$$

7. 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 population's total financial claims (CTP).

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

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

9. Usefulness in economic analysis: it allows the analysis, but also by types of savings (through indicators derived from detail) of the population's savings potential and comparative analysis in time or space.

10. Mode of use within the work: the indicator can be correlated with other generic indicators of the population's financial savings, but also with specific indicators of the population's financial status; at the same time, the indicator can be integrated into 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.

(2) *Indicator 2*

1. Section: I. Financial macroeconomics.
2. Name: Coefficient of the population's propensity to save.
3. Symbol: Cie.
4. Degree of synthesis: derivative indicator.
5. Data source: Financial Accounts – BNR and Statistical Yearbook.
6. Calculation formula:

$$Cie = (\Delta ECF / ECF_b) / (\Delta VBP / VBP_b)$$

(2)

, where "b" stands for the base period.

7. Explanations of the previous notation:

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

- VBP = the 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 liquidities available during the year

8. Economic significance: it is a flow indicator; the indicator highlights, through flows, the degree of savings of the population's monetary income and, implicitly, the dynamics of its financial potential, being useful for the knowledge and design of banking and financial policies.

9. Usefulness in economic analysis: it allows the analysis of the willingness to save of the population, being useful for the correlative analysis with the population's income and consumption indicators, and with the banking indicators specific to the population, of the dynamics of the population's saving and investment potential.

10. Mode of use within the work: the indicator can be correlated with other generic indicators of the population's savings and financial indebtedness, but also with specific indicators of the population's financial status; at the same time, the indicator can be integrated into 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.

(3) *Indicator 3*

1. Section: I. Financial macroeconomics.
2. Name: The coefficient of financial indebtedness of the population.
3. Symbol: Cip.
4. Degree of synthesis: derivative indicator.
5. Data source: Financial Accounts – BNR and Statistical Yearbook.
6. Calculation formula:

$$Cip = DTP / POP \tag{3}$$

7. Explanations of the previous notation:

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

- POP = total population: a grouping of individuals united by ties of citizenship and by establishing domicile on the territory of the state, in relation to which the latter exercises its sovereign power over the entire data set from which a sample is selected and in relation to

which the auditor wants to formulate his conclusions, being evaluated at the end of the year, according to the data from the Statistical Yearbook

8. Economic significance: the indicator highlights the financial debt per inhabitant, the debt capacity of the population, which depends, first, on the quality of the financial system and the level of income and purchasing power of the population; the indicator can be determined by stock or by flow (debts committed during the year).

9. Usefulness in economic analysis: it allows the analysis, but also by types of indebtedness (through indicators derived from detail) of the indebtedness capacity of the population and comparative analysis in time or space.

10. Mode of use within the work: the indicator can be correlated with other generic indicators of the population's savings and financial indebtedness, but also with specific indicators of the population's financial status; at the same time, the indicator can be integrated into 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 indicators.

3. Results & discussion

The financial assets of households account for 79.9% of GDP, if we look at the financial assets by instruments [3]. we notice that in 2021 the availability of cash and deposits predominates, but also participations and shares/fund units (increasing compared to 2020), potential causes being the improvement of the degree of digitization in the financial market and the increase stock market indices from 2021, combined with the strengthening of the population's confidence in the capital market (purchases of new fund units outstripped redemptions). Also, economic growth, salary increases, and capital market performance led to an increase in receivables from the insurance, pension and standardized guarantee systems financial instrument category compared to the previous year.

As for the financial liabilities of households, they increased in 2021, the stock of financial commitments being 18.9% in GDP and 5.4% in the stock of financial liabilities of the national economy. In the structure, the main financial liabilities are committed loans and other payables.

The volume of new credit is also highlighted, higher than that registered before the pandemic, mortgage loans, loans for the purchase of a home representing approximately half of the flow of loans, as well as consumer credit.

In 2022, the total indebtedness of the population continued its upward trend, but at a less alert pace than in the previous year, amid recent developments regarding high interest rates and increased uncertainty regarding economic developments. In structure, bank loans represent the most important component of the population's indebtedness, highlighting mortgage and reference consumer loans, loans granted by non-bank financial institutions, newly granted loans by non-bank financial institutions show a similar evolution.

It should be noted that about half of the mortgage loans were granted to individuals who were real estate buyers for the first time; due to climate changes, also felt among the population, mortgage loans with a climate destination have started to become attractive for individual borrowers, a proportion of about 30% of the mortgage loans granted being "green loans", intended for green buildings and increasing energy efficiency.

Regarding the incomes and expenses of the population, they recorded rising values compared to the previous year (2020), with incomes growing at a faster pace compared to expenses; the main destinations of the expenses made by households are the consumption of food, non-food goods, services and transfers to the public and private administration and to

the social insurance budgets (taxes, contributions, contributions, as well as covering some needs related to household production); it should be mentioned that the investment expenses for the purchase or construction of houses, the purchase of land and equipment necessary for household production, have a small share in the total expenses of the households of the population (only 0.4%). Within monetary incomes, the largest share was held by salaries and other incomes associated with them, incomes from social benefits, and incomes in kind. Given the current economic context (inflation, increased energy prices), it is households that are turning to their own savings or using excess savings accumulated during the pandemic. However, these savings from deposits are likely to be concentrated among households with higher incomes, over time that lower-income households spend a larger share of their income on basic food and home maintenance. It is also possible that some households will have to limit consumption or become dependent on government support to meet maintenance/consumption expenses (current expenses and bill payments).

Regarding the values of the relevant relative indicators characterizing the financial status of the population, in this paper we present the following:

Indicator 1. Financial savings rate 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 the population's income, interest rates and dividends, as well as the development of the banking system.

Table 2. The evolution of the financial savings rate in the period 2007 – 2022

indicator s	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
ECF s th lei	281719	268151	267400	258937	275787	329856	412876	436677	456547	499919	530414	534176	532039	614505	634000	653020
GDP th lei ²	416007	514007	501139	533881	565097	595367	637456	668590	712588	765135	856727	940478	1059803	1055549	1179377	1412457
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	58,22	53,00	46,23

Source: the databases of the National Bank of Romania (from the National Financial Accounts 2007 - 2021 and the monthly bulletins from the period 2007 - 2023) and the National Institute of Statistics (Statistical Yearbook of Romania, editions 2007 - 2022, Monthly Statistical Bulletin, 2007 - 2023, Press releases), Report on financial stability, 2007-2022 editions, NBR, Bucharest, Romania (NBR, 2007-2022)], (NIS, 2007-2022), , (NBR, 2007-2022) (CCFM, 2017).

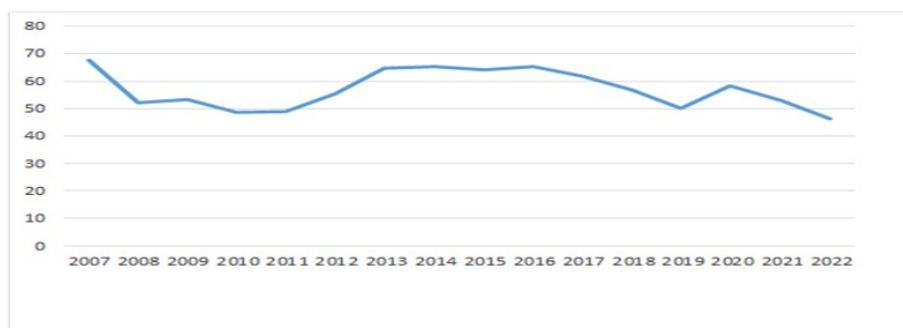


Fig. 1. The evolution of the financial savings rate of the population in the period 2007 – 2022

Source the databases of the National Bank of Romania (from the National Financial Accounts 2007 - 2021 and the monthly bulletins from the period 2007 - 2023) and the National Institute of Statistics (Statistical Yearbook of Romania, editions 2007 - 2022, Monthly Statistical Bulletin, 2007 - 2023, Press releases), Report on financial stability, 2007-2022 editions, NBR, Bucharest, Romania (NBR, 2007-2022)], (NIS, 2007-2022), (NBR, 2007-2022) (CCFM, 2017).

² Leu- romanian national currency, 1 EUR= 4.9510 lei, on 12.07.2023

In the analyzed period, it is mainly noticeable that the trend of the decrease in the level of this indicator as it was also presented in the previous report, i.e., at the end of the 2022 period it has a value 6.77 pp lower than that of 2021, being an opposite rhythm to that of 2020 compared to 2019, respectively an increase of 8.02 pp. In 2021, it registers a decrease of approx. 5.00 pp compared to 2020. It is obvious that the population's investments in financial securities were affected by the impact of the financial crisis generated by multiple crises (the Covid pandemic crisis, the energy crisis, the increase in inflation and implicitly the crisis of the war in Ukraine).

Indicator 2: The coefficient of the population's propensity to save (Cie)

Table 3. The evolution of the coefficient of propensity to save in the period 2007 – 2022

indicator	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
ECF mil.lei	281719	268151	267400	258937	275787	329856	412876	436677	456547	499919	530414	534176	532039	614505	634000	653020
VBP mil.lei	200549	265161	279977	276993	255752	171336	180202	250692	239711	296852	310832	400611	458224	500586	553117	628798
ΔECI	56149	-13568	-751	-8463	16850	54069	83020	23801	19870	43372	30495	3762	-2137	82466	19495	19020
ΔVBI	1991	64612	14816	-2984	-21241	-84416	8866	70490	-10981	57141	13686	89604	57613	42362	52531	75681
ΔECI/VBP	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	0,15	0,03	0,03
ΔVBP/V	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	0,09	0,09	0,12
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	1,68	0,33	0,25

Source: the databases of the National Bank of Romania (from the National Financial Accounts 2007 - 2021 and the monthly bulletins from the period 2007 - 2023) and the National Institute of Statistics (Statistical Yearbook of Romania, editions 2007 - 2022, Monthly Statistical Bulletin, 2007 - 2023, Press releases), Report on financial stability, 2007-2022 editions, NBR, Bucharest, Romania (NBR, 2007-2022)], (NIS, 2007-2022), , (NBR, 2007-2022) (CCFM, 2017).

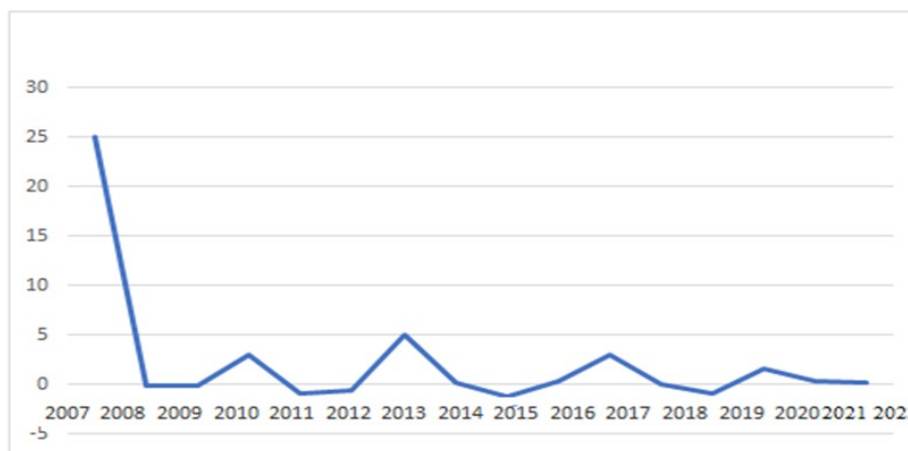


Figure 2. The evolution of the coefficient of the propensity to save the population in the period 2007 – 2022

Source: the databases of the National Bank of Romania (from the National Financial Accounts 2007 - 2021 and the monthly bulletins from the period 2007 - 2023) and the National Institute of Statistics (Statistical Yearbook of Romania, editions 2007 - 2022, Monthly Statistical Bulletin, 2007 - 2023, Press releases), Report on financial stability, 2007-2022 editions, NBR, Bucharest, Romania (NBR, 2007-2022)], (NIS, 2007-2022), , (NBR, 2007-2022) (CCFM, 2017).

The evolution of the level of this indicator highlights two phenomena: in certain periods (2008, 2009, 2011, 2012, 2015 and 2019) the growth coefficient of saving was exceeded by the growth coefficient of monetary incomes, because in other periods (2007, 2010, 2013,

2014, 2016, 2017, 2018, 2020, 2021 and 2022) financial saving to register a positive saving growth coefficient and above that of money income.

Although there was an increase in the increase in the monetary income of the population during 2022 compared to 2021, respectively from (0.09) to (0.12), the growth coefficient having an increasing trend from (0.32) to (6.55), in the period 2007 - 2018, population savings, reflected by the savings growth rate, decreased in the last period (reaching a negative minimum of (-0.44) in 2019 compared to 2018), and the coefficient of the population's propensity to save decreased from 25.00 (in 2007 compared to 2006) reaching a negative minimum of (-0.88) for 2019 compared to 2018. Moreover, in 2020 we observe a return of this indicator, registering a positive value of (1.68) in 2020, but followed by a downward trend in the last two years 2021 and 2022. At the same time, it will be found, through other indicators, that the degree of indebtedness of the population.

However, the year 2020 records a significant increase in the level of the indicator compared to the previous year, a fact caused by the increase in both the population's savings and monetary incomes, but at the level of 2021, because of multiple crises, the coefficient of the population's propensity to save is maintained at a positive level but registering a decrease in its value.

Indicator 3: The debt ratio of the population (Cip)

Table 4. The evolution of the debt ratio in the period 2007 – 2022

indicator	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
DTP th.lei	101479	137544	137835	151112	158433	163460	165072	161484	151870	189838	205594	219986	233185	249,508	265831	267293
POP th loc	22562	22542	22516	22481	22434	22391	22346	22298	22242	22223	22215	22197	22175	22142	22047	21943
Cip th 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	11.27	12.05	12.18

Source: the databases of the National Bank of Romania (from the National Financial Accounts 2007 - 2021 and the monthly bulletins from the period 2007 - 2023) and the National Institute of Statistics (Statistical Yearbook of Romania, editions 2007 - 2022, Monthly Statistical Bulletin, 2007 - 2023, Press releases), Report on financial stability, 2007-2022 editions, NBR, Bucharest, Romania (NBR, 2007-2022)], (NIS, 2007-2022), , (NBR, 2007-2022) (CCFM, 2017).

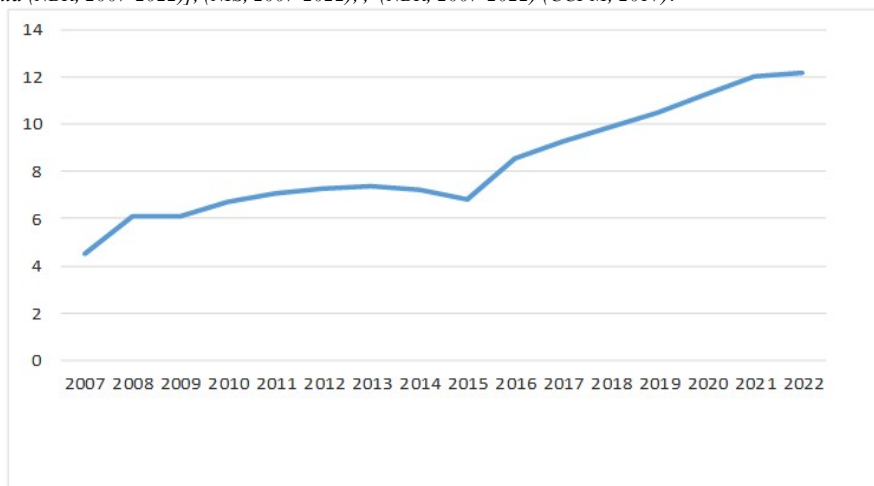


Figure 3. Evolution of the debt ratio of the population in the period 2007 – 2022

Source: the databases of the National Bank of Romania (from the National Financial Accounts 2007 - 2021 and the monthly bulletins from the period 2007 - 2023) and the National Institute of Statistics (Statistical Yearbook of Romania, editions 2007 - 2022, Monthly Statistical Bulletin, 2007 - 2023, Press releases), Report on financial stability, 2007-2022 editions, NBR, Bucharest, Romania (NBR, 2007-2022)], (NIS, 2007-2022), , (NBR, 2007-2022) (CCFM, 2017).

It is noted that the degree of indebtedness of the population has increased significantly, but the effect of inflation must also be considered, in nominal terms the degree of indebtedness is increasing, during the analyzed period the evolution of the indebtedness ratio increased by 0.13 p.p. in 2022 compared to 2021, and in 2022 it reaches the value of 12.18 p.p.

Obviously, the evolution of this indicator must be correlated with the evolution of interest rates, the purchasing power of the population, and with other financial indicators of the population, the indicator highlighting the indebtedness capacity of the population, but also the current context existing at the national, European, and global level, generated by multi-crisis.

4. Conclusions

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

- fluctuating evolutions of some relevant financial indicators, often contrary to the financial dynamics of a market economy, mainly due to global and regional crises with a direct impact on the national economy, as well as their overlap with the reforms managed within the Recovery and Resilience Plan which Romania is now implementing and which constitutes a Strategic Document that establishes the investment priorities and reforms necessary for recovery and sustainable growth, linked to the green and digital transition envisaged by the European Commission for the period 2022-2026.

- the reduced financial potential of the population, compared to that of the EU countries, but also to the needs of the development of the saving-investment cycle, primarily for the beneficial evolution of the economy, as well as the evolution of prices for basic products generated by the multiple crises that dominated the year 2022. In this sense, the affirmation of the population as the priority internal financier of the economy, often the only one, highlights the shortage of investment opportunities specific to the Households of the population, in an economy with quite a few viable, authentic financial resources.

- the relevant indicators regarding the assessment of the financial status of the population are directly influenced by the evolution of some representative indicators at national and European level, such as: the evolution of economic growth, the evolution of the active population in the economy and the labor market, the evolution of the viability of public finances, the evolution demographic changes at the national and European level, or the mobility of the active workforce, so necessary for the sustainable development of the strategic sectors of activity (the volume of remittances).

- the evolution of the primary indicators regarding the characterization of the financial status of the population in the period 2007 - 2022, especially for the active population, is directly influenced by the quality of employment of able-bodied and employed adults. Moreover, we appreciate that indicators such as the financialization rate of the population's income, the population's financial savings rate, net financial assets and the net financing capacity of the economy are directly influenced by employment in the economic sectors, as well as by how the energy market evolves of work both at national and European level (CCFM, 2019), (CCFM, 2020), (CCFM, 2021), (CCFM, 2022)

- decorrelations and dynamic discrepancies between 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 2021, in the EU, we notice that Romania is, from the perspective of both components (assets and liabilities), at the "tail" of the ranking. Financial assets relative to GDP increased in the EU, but in Romania, although they increased slightly compared to 2020, households have the lowest value of financial assets relative to GDP, only a third of the EU average in 2021 (CCFM, 2022)

- from the point of view of the financial assets of households, Romania has a share of 81.9% of the GDP, the states that overtake it, having values at a significant distance, being Latvia (105.7%), Slovakia (107.6%), Poland (108.4%). The countries in the first places are Denmark (434% of GDP, approximately five times more than the level in Romania), the Netherlands, Sweden, Belgium (shares exceeding 300% of GDP).

- as regards Romania's financial debts (% GDP), in 2021 they totaled 21.6% of GDP, countries in the immediate vicinity in the ranking being Hungary (24.6% of GDP), Latvia (21.9 %), or Lithuania (26.7%). Also, countries with a very high debt level are Denmark (109.1%, approximately 5 times more compared to Romania), Cyprus or the Netherlands.

- It is worth noting the evolution of the European population, as well as the reference indicators according to the European Commission reports, namely the fact that in 2018, life expectancy at birth was increasing: 78.2 years for men and 83.7 years for women. This trend is expected to continue men born in 2070 could live 86 years and women 90 years. In 2018, the average number of births was 1.55 to a woman and the average age of the mother was 31.3 years. By 2070, it is estimated that 30.3% of the population will be 65 years or older (compared to 20.3% in 2019) and 13.2% will be 80 years or older (compared to 5.8 % in 2019). At EU level, the composition of families is changing: two parents with children, people living alone, single parents or couples without children. The share of Europe's population in the world is decreasing. It is estimated that in 2070 it will be just under 4% of the world's population. All these developments will have a direct impact on the primary and derived indicators related to the population at national and European level (CCFM,2022).

-The impact of demographic changes with a direct effect on the financial indicators of the European population. Europe's working-age population is shrinking, and we need to identify levers to support economic growth by attracting citizens to the labor market and increasing productivity. To cope with the phenomenon of the aging of European society, our health and care systems will have to adapt further, and we will have to find ways to finance public spending, including the development of innovative financial instruments, support for this segment, against the background of population aging. Demographic issues often vary significantly across countries. As certain regions may experience rapid demographic change, this will generate new opportunities and challenges, from investment to infrastructure and access to services. Finding new solutions to help citizens navigate this process of change will be essential. The private pension system in Romania (Pillar 2+Pillar 3) reached the threshold of 100 billion lei, for the first time since its establishment at the end of 2022 according to data published by the Financial Supervisory Authority (ASF). Thus, the total assets of the Pillar 2 pension funds amounted to 96.449 billion lei, in December 2022, and the net assets of the Pillar 3 pension funds amounted to 3.622 billion lei, which leads to a total of net assets of 100.071 billion lei, at the end of 2022. It is the first time since the establishment of the private pension system in Romania, in 2008, when this threshold was exceeded (CCFM, 2022)

- Demographic changes can also have an impact on Europe's position in the world. The percentage it will hold in the global population and GDP will be comparatively less. It is therefore more important that Europe is united, stronger, and more strategic.

-Demographic changes and the twin ecological and digital transitions often influence, support, or accelerate each other: strategic foresight will therefore be an essential tool for anticipating and designing tailored policies to address these issues (Rusu, E. at all, 2022)

- European financing is and will remain in the short and medium term, an opportunity both for the member states and for institutions and SMEs to have a starting point and, implicitly, with a direct impact on the financial indicators related to the population. The major challenge for national and European authorities is to deal with the overlap of the 2021-2023 funding packages with complementary funding areas, namely the Multiannual Financial Framework 2021-2027, the Resilience and Recovery Mechanism 2021-2023 and the European Green Deal. 2021-2050, packages that also overlap with the post-programming period 2014-2020 and the adoption of strategic national plans with direct societal impact. The investments and reforms included under the "Green Transition" Pillar, represent cumulative non-reimbursable support and loans worth EUR 15.314 billion are expected to contribute to Romania's climate and energy objectives.

- The gloomy economic scenario given by inflation, recession, and the energy crisis, leads us to state that the great challenge in terms of policies at the governmental level is given by the support of purchasing power due to inflation, especially for the vulnerable population, as well as the implementation correctness of the reforms at the level of state institutions and for the societal good.

- The funds allocated to Romania by the European Union represent a basic pillar for the sustainable development of the national economy and for achieving the objectives of the UN Agenda 203, respectively for supporting economic, social, and territorial cohesion, respectively for the objectives of sustainable development. Within the Memorandum on the official submission to the European Commission of the Partnership Agreement for the 2021-2027 programming period, 16 programs were defined, eight national and eight regionals. The new element is the operational programs dedicated to transport infrastructure, health and just transition. All these programs add up to a value of over 32 billion euros (CCFM, 2022)

However, it should be noted that the work also has limitations, due to the lack of data, which is to be included and processed in future research.

The general conclusion is that the years 2021-2022 influenced the financial state of the population, the uncertainty regarding the state of health, the workplace, inflation, or resources causing households to be cautious in their consumption or saving behavior. In this sense, first, average incomes have increased compared to 2020, also average expenses have increased in turn (except for investment expenses intended for the purchase or construction of housing, the purchase of land and equipment necessary for household production, the purchase of shares etc. have a small share in the total expenses of the population's households).

Although the year 2022 is notable for the tense economic context, with war on the border, energy crisis, inflation of over 16% and interest on deposits at half, the number of Romanians with bank deposits of more than 100,000 euros has increased significantly, possible influences in this meaning given the high profits and high salaries obtained in some economic sectors, such as the banking sector, the energy sector, oil & gas, while at the opposite pole for many Romanians the increase in ROBOR and the explosion of electricity and natural gas prices led to a reduction in available income/ money.

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HOW THE LARGEST AMERICAN CORPORATIONS EVOLVED IN THE PERIOD 2019-2022

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Abstract: *One of the most important achievements of the last century was the spread of huge business organizations all over the world. Based on modern organization and management, these corporations began to obtain an increasing efficiency through various methods and techniques. After the fall of the Berlin Wall, the process of globalization expanded very rapidly all over the world. As key pillars of this widespread and complex process, corporations fulfil several important functions, such as employing a large number of people and providing various products and/or services to numerous customers. Today's business world is ruled by huge multinational and transnational corporations which operate and compete on a global scale. Many of them are powerful American corporations from various domains. The goal of the paper is to present and briefly analyze the evolution of the first ten American corporations in the period 2019-2022 in terms of their total revenues. This aim was achieved through a qualitative research method. The results reveal that the ten largest American corporations in terms of total revenues obtained high economic performance during the period 2019-2022 and that they are activating in important economic sectors, such as retailing, the pharmaceutical sector and health care system, and the IT&C sector. Wal-Mart clearly dominated the hierarchy in the whole period.*

Keywords: *corporation, revenue, Wal-Mart, America.*

JEL Classification: *F00, F23.*

1. Introduction

One of the most important achievements of the last century was the spread of huge business organizations all over the world. Based on modern organization and management, these corporations began to obtain an increasing efficiency through various methods and techniques, such as divisionalization, decentralization, diversification or economies of scale (Whittington and Mayer, 2000; Cornescu et al., 2004; Marinescu and Toma, 2015). Corporations represent a vehicle of capitalism expansion (Butler, 1989) and vary across countries due to the existence of different institutional structures, laws and regulations, cultures, and government policies (Ellsworth, 2002).

After the fall of the Berlin Wall, the process of globalization expanded very rapidly all over the world. As key pillars of this widespread and complex process, corporations fulfil several important functions, such as employing a large number of people and providing various products and/or services to numerous customers. Thus, they create and deliver value to many stakeholders (e.g., shareholders, employees, customers, communities). Moreover, corporate decisions are considered as „one of the major drivers of some of the most pressing social problems, including rising inequality, labor market dislocations, growing market power, and climate change” (Bebchuk and Tallarita, 2022, p.1038).

Today's business world is ruled by huge multinational and transnational corporations which operate and compete on a global scale (Toma, 2013). Many of them are powerful American corporations from various domains (e.g., retailing). Since the end of the nineteenth century most American industries have begun to be dominated by large corporations.

The goal of the paper is to present and briefly analyze the evolution of the first ten American corporations in the period 2019-2022 in terms of their total revenues. This aim was achieved through a qualitative research method. The study is structured as follows: the next section displays the literature review. The research methodology is illustrated in the third section of the paper. The outcomes of the study are discussed in the fourth section. The last section shows the conclusions of the paper.

2. Literature review

Derived from the Latin word *corporatio*, the concept of corporation has always represented a subject of interest for researchers and practitioners. A corporation is defined as:

- „a type of business that the law treats like a single person” and “can be owned by multiple shareholders” (Hitchcock, 2023, p.1).
- „a legal entity that is separate and distinct from its owners” (Berry-Johnson, 2024, p.1).
- „a legal entity created by individuals, [stockholders](#), or shareholders, with the purpose of operating for profit” (Corporate Finance Institute Team, 2024, p.1).
- „a body formed and authorized by law to act as a single person although constituted by one or more persons and legally endowed with various rights and duties including the capacity of succession” (Merriam-Webster, 2024, p.1)
- „a legally established entity that can enter into contracts, own assets and incur debt, as well as sue and be sued- all separately from its owner(s)” (Business Development Bank of Canada, 2024, p.1).

Thus, there is a plethora of definitions in the literature. Despite the lack of consensus, the above-mentioned definitions emphasize some of the key characteristics of a corporation, as follows:

- It is a legal entity owned by a single person or by several shareholders, being separate from him/her or them.
- A corporation is created by shareholders with the aim of obtaining profit.
- It has different rights and duties according to the law.
- A corporation carries on business activities, enters into contracts and possesses its own assets.

In the last decades, researchers published numerous articles and books related to the evolution of the largest corporations all over the world (Toma et al., 2016a; Grădinaru and Toma, 2018; Toma, 2019; Foley et al., 2021). In the age of globalization (Toma, 2005; Michie, 2019), facing especially the Chinese challenge (Toma et al., 2017), the American corporations (e.g., Wal-Mart, Berkshire Hathaway, Apple, Exxon Mobil, CVS Health) proved to be highly competitive and successful (Blanchard and Matschke, 2015) in the retailing sector (Grădinaru and Toma, 2017), the financial and banking sector (Toma and Grădinaru, 2018), the information technology and communications (IT&C) sector (Froud et al., 2012), the oil sector (Toma et al., 2015) and the pharmaceutical sector (Toma and Catană, 2021) etc. Their impressive performance is based on the design and implementation of various concepts, methods and techniques, such as strategic thinking (Toma et al., 2016b) and planning (Toma and Grădinaru, 2016c), entrepreneurialism (Zainea et al., 2020), marketing mix (Catană and Toma, 2021), corporate social responsibility (Marinescu et al., 2010), total quality management (Toma, 2006), Six Sigma (Toma, 2008), digitalization (Toma and Tohănean, 2018), and sustainable business models (Toma and Tohănean, 2019) .

3. Research methodology

To attain the purpose of the paper, the author utilized a qualitative research method. On this line, he began by collecting the data through desk research. The author found many information in several secondary data sources (e.g., articles, reports, books). Then, he analysed and synthesized them in order to write the paper.

4. Results and discussion

This section of the study is devoted to the analysis of the evolution of the first ten American corporations in the period 2019-2022 in terms of their total revenues. This interval of time encompassed both the pre-COVID 19 pandemic years and the pandemic period. With more than 523 billion USD revenues, Wal-Mart, the American retailer colossus, clearly dominated the top in 2019 (Table no. 1). The first ten American corporations operated in various fields of activity as follows:

- four corporations (CVS Health, UnitedHealth Group, McKesson, Cencora) were from the pharmaceutical sector and health care system;
- two corporations (Wal-Mart, Amazon) were from the retailing sector;
- two corporations (Apple, AT&T) were from the IT&C sector;
- one conglomerate holding company (Berkshire Hathaway) encompassed different sectors (insurance, financial services, utilities and energy group, construction etc.);
- one corporation (ExxonMobil) was from the petroleum refining industry.

Table no. 1. The ten largest American corporations by their total revenues in 2019

No.	Corporation	Revenues (\$B)
1.	Wal-Mart	523.964
2.	Amazon	280.522
3.	ExxonMobil	264.938
4.	Apple	260.174
5.	CVS Health	256.776
6.	Berkshire Hathaway	254.616
7.	UnitedHealth Group	242.155
8.	McKesson	214.319
9.	AT&T	181.193
10.	Cencora	179.589,1

Source: Fortune, 2020

One year later, Wal-Mart preserved its first position in the top (Table no. 2). The first ten American corporations activated in different domains of activity as follows:

- four corporations (CVS Health, UnitedHealth Group, McKesson, Cencora) were from the pharmaceutical sector and health care system;
- two corporations (Wal-Mart, Amazon) were from the retailing sector;
- two corporations (Apple, Alphabet) were from the IT&C sector;
- one conglomerate holding company (Berkshire Hathaway) encompassed different sectors (insurance, financial services, utilities and energy group, construction etc.);
- one corporation (ExxonMobil) was from the petroleum refining industry.

Table no. 2. The ten largest American corporations by their total revenues in 2020

No.	Corporation	Revenues (\$B)
1.	Wal-Mart	559.151
2.	Amazon	386.064
3.	Apple	274.515
4.	CVS Health	268.706
5.	UnitedHealth Group	257.141
6.	Berkshire Hathaway	245.510
7.	McKesson	231.051
8.	Cencora	189.893,9
9.	Alphabet	182.527
10.	ExxonMobil	181.502

Source: Fortune, 2021

Year 2021 witnessed, once again, the domination of Wal-Mart (Table no. 3) . The first ten American corporations operated in various fields of activity as follows:

- four corporations (CVS Health, UnitedHealth Group, McKesson, Cencora) were from the pharmaceutical sector and health care system;
- two corporations (Wal-Mart, Amazon) were from the retailing sector;
- two corporations (Apple, Alphabet) were from the IT&C sector;
- one conglomerate holding company (Berkshire Hathaway) encompassed different sectors (insurance, financial services, utilities and energy group, construction etc.);
- one corporation (ExxonMobil) was from the petroleum refining industry.

Table no. 3. The ten largest American corporations by their total revenues in 2021

No.	Corporation	Revenues (\$B)
1.	Wal-Mart	572.754
2.	Amazon	469.822
3.	Apple	365.817
4.	CVS Health	292.111
5.	UnitedHealth Group	287.597
6.	ExxonMobil	285.640
7.	Berkshire Hathaway	276.094
8.	Alphabet	257.637
9.	McKesson	238.228
10.	Cencora	213.988,8

Source: Fortune, 2022

In 2022, Wal-Mart remained the largest American corporation in terms of revenues (Table no. 4). The first ten American corporations activated in different domains of activity as follows:

- three corporations (CVS Health, UnitedHealth Group, McKesson) were from the pharmaceutical sector and health care system;
- two corporations (Wal-Mart, Amazon) were from the retailing sector;
- two corporations (ExxonMobil, Chevron) were from the petroleum refining industry;
- two corporations (Apple, Alphabet) were from the IT&C sector;

- one conglomerate holding company (Berkshire Hathaway) encompassed different sectors (insurance, financial services, utilities and energy group, construction etc.).

Table no. 4. The ten largest American corporations by their total revenues in 2022

No.	Corporation	Revenues (\$B)
1.	Wal-Mart	611.289
2.	Amazon	513.983
3.	ExxonMobil	413.680
4.	Apple	394.328
5.	UnitedHealth Group	324.162
6.	CVS Health	322.467
7.	Berkshire Hathaway	302.089
8.	Alphabet	282.836
9.	McKesson	263.966
10.	Chevron	246.252

Source: *Fortune*, 2023

In essence, the above outcomes lead to the following interesting issues for the period 2019-2022:

- Wal-Mart was by far the largest American biggest corporation by its total revenues every year. It succeeded in continuously growing its revenues from one year to another.
- Amazon was the main competitor of Wal-Mart for the whole period.
- Seven American corporations out of ten were present in the top every year.
- The top was dominated by American corporations from the pharmaceutical sector and health care system, retailing, petroleum refining industry, financial services, and IT&C sector.

5. Conclusions

Since their emergence, the American corporations have become key players not only in the American economy but also in the global economy. The globalization process allowed them to expand all over the world.

The study shows that the ten largest American corporations in terms of total revenues obtained high economic performance during the period 2019-2022. Also, it reveals that they are activating in important economic sectors, such as retailing, the pharmaceutical sector and health care system, and the IT&C sector. Wal-Mart clearly dominated the hierarchy in the whole period.

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SUSTAINABLE DEVELOPMENT BASED ON ECO-INNOVATION

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Abstract: *Creating and maintaining a stable balance between economic development and resource use, the domain of the major objective, unanimously accepted, of sustainable development. In this context, all stakeholders, openly from entrepreneurs, decision makers and all members of the communities, must make sustained efforts to implement the specific tools. The role of entrepreneurs who approach "green" business is to develop sustainable products and services that protect the environment. This is possible to depart from eco-innovation. The concept of eco-innovation defines that process through which modern, innovative processes are developed, implemented and maintained, with the aim of protecting the environment. The definition and implementation of a management based on the concept of eco-innovation, the circumstance of a modern entrepreneurial desire. This paper proposes to present relevant aspects of the implementation of the concept of eco-innovation in sustainable development.*

Keywords: *sustainability, social innovations, innovative technologies.*

JEL Classification: *Q56, O35, O32.*

1. Introduction

Creating and maintaining a stable balance between economic development and the use of resources is the major objective, unanimously accepted, of sustainable development. In this context, all stakeholders, starting from entrepreneurs, decision makers, and up to all members of the communities, must make sustained efforts to implement specific tools.

The extremely fast pace of technological changes manifested in the last decade forces organizations to generate and apply, as urgently as possible, innovative, complex ideas that contribute to eco-innovation.

When an analysis of a company's strong factors is carried out, among the first competencies that generate the company's assets, its ability to generate innovation must also be found.

The idea that progress, in any field of activity, is based on innovative ideas is accepted worldwide. They are the basis of innovation management, which, in turn, must integrate the basic concepts of sustainable management.

The definition and implementation of a management based on the concept of eco-innovation, represents a desire of modern entrepreneurship.

The role of entrepreneurs who approach "green" business is to develop sustainable products and services that protect the environment. This is possible starting from eco-innovation.

The concept of eco-innovation defines that process through which modern, innovative processes are developed, implemented and maintained, with the aim of protecting the environment.

2. Eco-innovation basic component of sustainable management

The concept of sustainable management was created to be able to define, as precisely and realistically as possible, all the practices that are applied in a business and lead to its sustainable development.

The practical application of these ideas is based on a management focused on the future, a management that, starting from the basic concepts, will manage to plan, organize and coordinate the entire activity of the organization, taking into account the principles of sustainable development.

The integration of sustainability into the current activity of organizations is a strategic decision, with a time horizon defined as long-term, a decision that is adopted at the top management level of the respective organization.

In order to be able to apply these ideas in economic practice, it is necessary to raise the awareness of all parties involved, regarding the sustainable side of applied management.

A management based on eco-innovation is a management that wants to develop a product or a technology designed in such a way as to bring benefit to the organization's activity, to be an asset on the market, and at the same time to respect the principles of sustainability. In this sense, the novelties achieved through eco-innovation will be based on reducing the impact that these products or technologies will have on the environment.

"Eco" innovations have the role of contributing to the development of sustainable economic activities. Their impact on the economic and social environment is manifested through (figure 1):

- the creation of new sustainable products and technologies
- reduction of raw material costs
- generating sustainable business models
- sustainable management of the resources used
- Improving the quality of life.

Eco-innovation can be applied to create a new business, but it can also reshape activities from a business that is already underway, by creating and developing services, products and technologies that generate innovation based on the concept of sustainability.

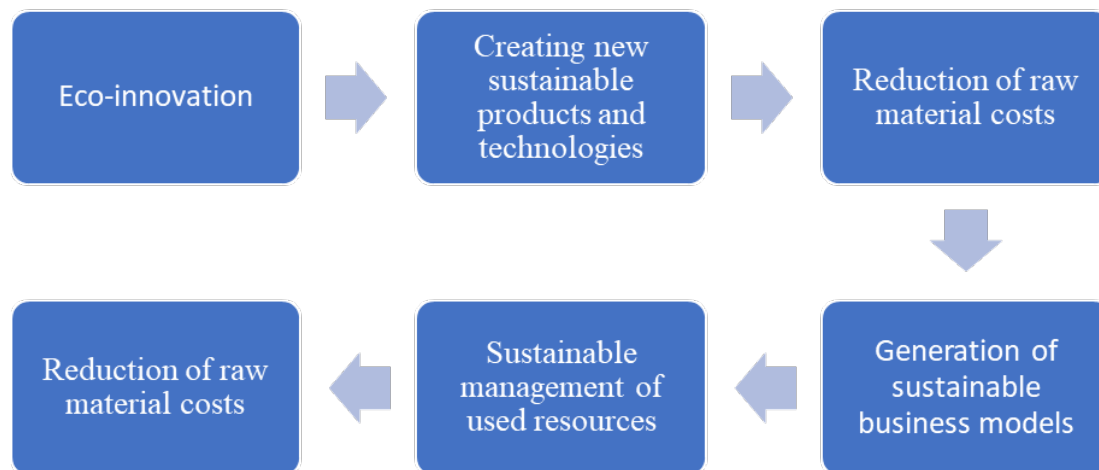


Figure 1. The impact of eco-innovation on the economic and social environment

Innovation represents the application of a new idea or an invention, a product, a technology or a system in economic activity (Albu, 2014).

The "green" approach to an innovation represents the ability to create innovative products, services or technologies that use renewable raw materials and energy.

Innovation involves the following steps (Albu, 2014):

- taking the decision to initiate the financial efforts necessary for its realization and obtaining the necessary resources;
- investing these resources in an innovation project;

- project development, respectively the technical activity of detailing the original concept and transforming it into a new product, process or system, suitable for commercialization.

Eco-innovation must be applied in all aspects of a business, starting from the identification of the materials necessary to make new products, passing through the processes necessary to make them, and ending with the identification of methods of controlled and ecological disposal of waste.

At the level of the European Union, the "eco-innovation" index is calculated, based on 18 indicators that measure:

- the level at which ecology is given importance
- quantifying the effects of economic activities with an ecological side
- efficiency of resource use.

According to this index, countries are classified into 3 categories (figure 2):

- the group of leading countries in eco-innovation
- the group of countries with medium performances in eco-innovation
- the group of countries that require massive recovery in the field of eco-innovation.

As can be seen from the graph, Romania is at the bottom of the ranking and requires a massive orientation towards eco-innovation.

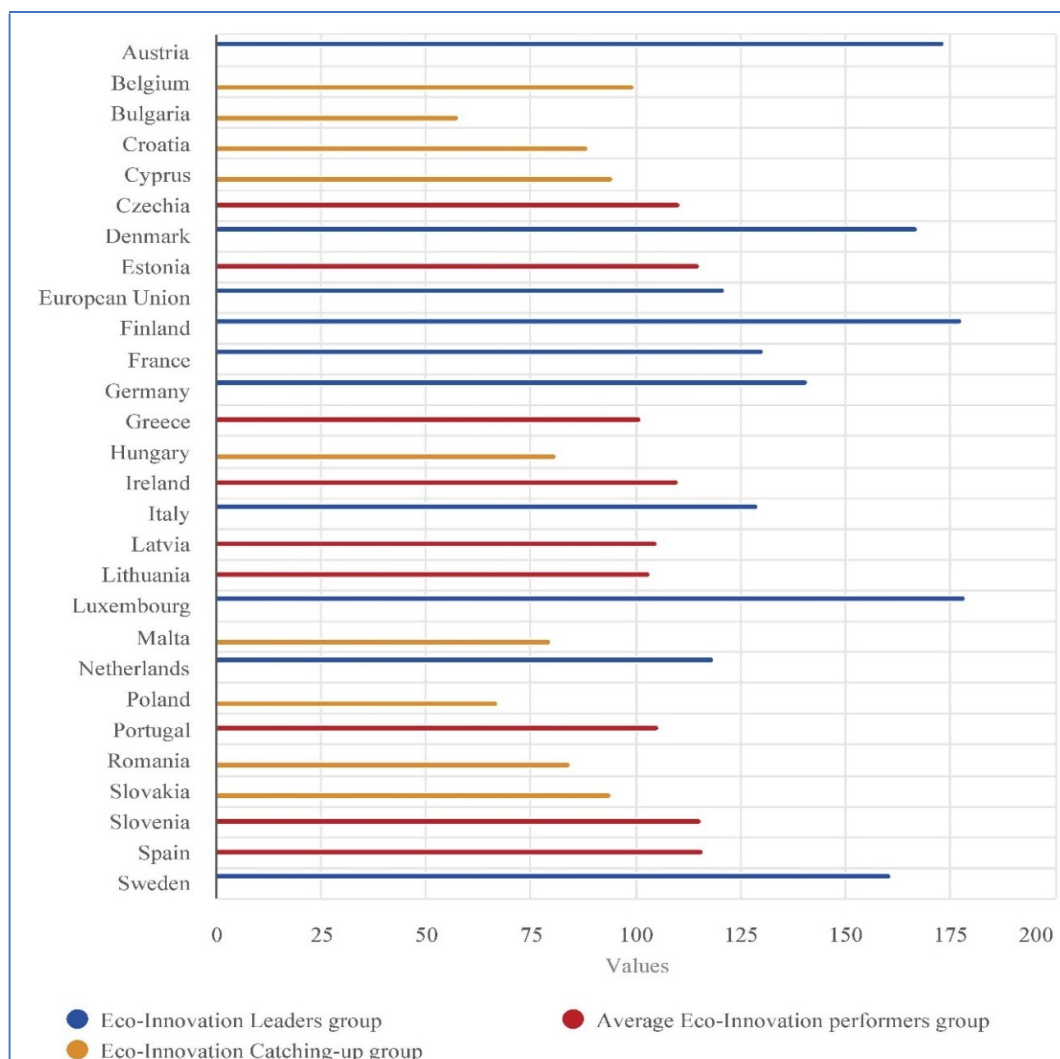


Figure 2. European eco-innovation score, 2022

Source: processing after <https://ec.europa.eu/eurostat/statistics-explained>

From the first stage, that of initiating financial efforts to achieve innovation, organizations must have the ability to direct their resources towards the acquisition of patents for inventions, raw materials, energies that generate sustainable innovations.

The eco-innovation process must have two major orientations:

- *towards production*, when the producer directs his resources towards the acquisition of invention patents, raw materials, sustainable innovative technologies;
- *to the demand*, when the link between the demand shown on the market and the innovation activities is based on the tendency shown by customers to orientate towards eco-designed, eco-innovated and eco-realized products.

Organizations that approach eco-innovation can benefit from a number of advantages, such as:

- increasing the reputation in the market
- improving the relationship with community members

- increase in sales
- compliance with the legal requirements regarding environmental protection.

3. Business accelerators based on eco-innovation

In recent years, especially in the last decade, businesses all over the world are turning to eco-innovation solutions. This fact implies reducing the effects of pollution using modern, sustainable products and technologies.

Within the implementation of eco-innovation, the entire life cycle of a product is rethought from the point of view of sustainability.

The technical and technological changes attract the approach of the organization's strategy by putting in the foreground the aspects related to sustainability.

In order to achieve sustainable business models, a series of initiatives aimed at diversifying entrepreneurship that capitalize on opportunities have been implemented at the European Union level.

The so-called "friendly businesses" are sustainable businesses whose primary objective is to reduce the impact on the environment. In practice, this major objective manifests itself through:

- reducing the carbon footprint
- reducing water consumption
- Waste recycling.

The essential advantages deriving from a sustainable business, based on eco-innovation, are:

- reduction of energy costs, raw materials
- reducing waste and making the production process more efficient
- reducing pollution
- protecting the environment
- Increasing the reputation of the organization.

Business models based on eco-innovation use a number of elements that generate innovative momentum. The most important of these refer to the attitude of managers towards eco-innovation, the existence of a political and legislative framework to support eco-innovation, access to financing.

Organizations can achieve their eco-innovation objectives by carrying out sustainable activities. In addition, eco-innovations bring advantages not only to the organizations that implement them, but also to the national economy in general; helping to create new jobs (Paraschiv, s.a, 2012).

Starting from energy efficiency and the approach to the use of resources through the concept of circular economy, modern business models have the chance to develop their future based on eco-innovations.

In order to accelerate the creation of businesses based on eco-innovation, a series of innovation hubs were created at the national level to support entrepreneurial development.

The main targeted areas are:

- waste management
- education about and for nature
- reducing emissions
- waste reduction
- greening of economic activities
- development of sustainable raw materials
- renewable energy.

A suggestive example was the Black Sea ClimAccelerator 2021, which offered the chance for 42 green start-ups, from Romania and Bulgaria, to start their activity and develop. All the entrepreneurs representing the selected start-ups benefited from mentoring sessions with specialists from the domestic and international business environment.

In 2023 Romania ClimAccelerator represented the largest and most complex accelerator of start-ups with low impact on the environment and which, through the technologies used, are generators of a "green" economic future.

The start-ups that were beneficiaries of Romania ClimAccelerator, approached different businesses, such as:

- promoting the circular economy by developing technologies that use raw materials obtained from waste
- reducing food waste in the Horeca sector by optimizing the operations of placing, receiving and making orders
- reducing the carbon footprint through the digital management of emissions
- managing green cities
- Reducing waste through reuse.

The role of these hubs is to create a business school based on eco-innovation and to establish a platform to connect the interested parties, largely also securing the sources of funding (figure 3).

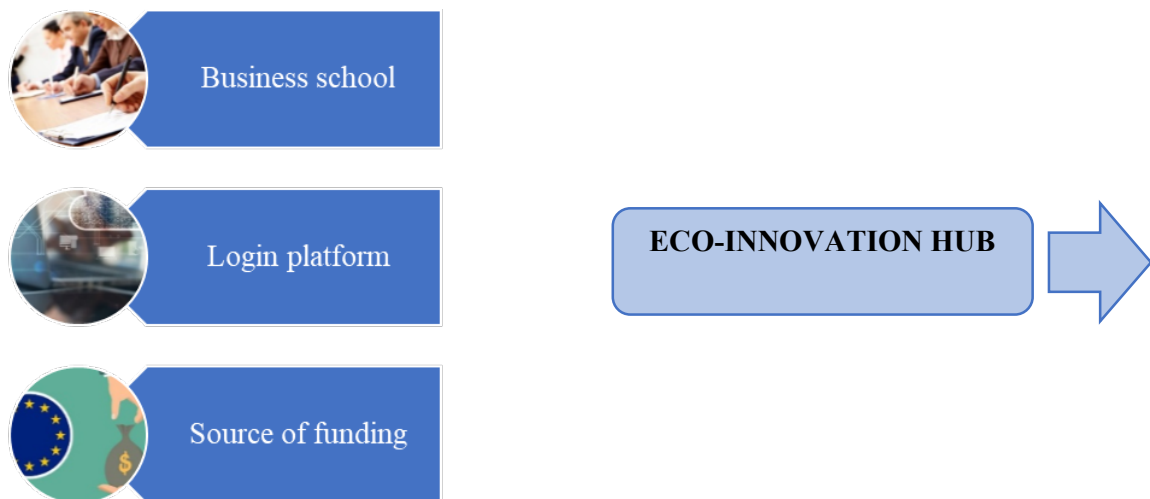


Figure 3. The role of eco-innovation hubs

4. Conclusions

The definition and implementation of a management based on the concept of eco-innovation, represents a desire of modern entrepreneurship.

The role of entrepreneurs who approach "green" business is to develop sustainable products and services that protect the environment. This is possible starting from eco-innovation.

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Although at an early stage, Romania is making great strides towards approaching business from an ecological perspective. In this sense, the creation of development hubs in this field represents an optimal approach.

The use of techniques, technologies and products based on eco-innovation is an essential approach of modern businesses. Innovation and design based on the protection of the environment and resources are essential elements in sustainable development based on eco-innovation.

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We have divided the inflation rate values into four groups:

- values of 2% (as the benchmark for the term "stability") or just above, not exceeding 3% (the cells for these values have a white background);
- values from 3 to 10%, above the stability level and corresponding to a visible level (through negative effects) in both personal and corporate budgets (the cells for these values have a yellow background);
- values from 10 to 20%, which are accelerating the erosion of the purchasing power of the population and are determining the balances of enterprises (the cells corresponding to these values have an orange background);
- values above 20%, which are close to inflationary crisis zones (cells with red background).

Table 1 shows the following for the countries analysed:

- a. a difference between the countries of Western Europe and the USA on the one hand and the countries of Central and Eastern Europe on the other, in the sense that in the former, the level of inflation is much lower, the figures are much closer to the range characteristic of stability, while in the latter group, the figures consistently exceed this range;
- b. over 27 years, there have been three inflationary spikes, two small ones in 2008, in the wake of the financial crisis, then in 2011 and 2012, as the crisis was being overcome, and the third, which was persistent, began in 2021 and continued into 2022 and 2023;
- c. in the middle of the second decade, 2014, 2015, 2016, many European countries, as well as the USA, experienced a more or less prolonged deflationary peak or were close to such a phase, and without generalising, some European countries repeated the experience in the pandemic year, due to the closure of their economies;
- d. the countries with the most disappointing inflation performance are Turkey and Romania;
- e. in Romania's case, out of the 27 years analysed, it had an inflation of over 20% for 6 years, then another 3, the inflation rate was over 3% for 12 years, it experienced deflation (denied by the NBR and motivated by fiscal effects) for 2, and the statistics recorded inflation values at the level of financial stability for only 3 years. It should also be noted that this counter-performance of our country is unique in the European Union.

2. Causes of the inflationary crisis according to central banks

2021 marked increases in inflationary phenomena in many countries, the phenomenon has accelerated in 2022 and has begun to fade in 2023. Here are some case studies:

- a. In the summer of 2021, the European Central Bank (ECB) expected inflation to pick up in the autumn of that year and forecast a reduction in 2022. The ECB saw the inflationary surge as stemming from *"the sharp rise in oil prices starting around halfway through last year, the reversal of the temporary reduction in the VAT rate in Germany, the delay of summer promotional sales in 2020, and the manifestation of cost pressures from temporary shortages of materials and equipment"* (ECB, 2021). ECB forecasts for 2022 did not come true. Thus, in June 2022, the ECB Economic Bulletin, considered that *"inflation picked up [...] to 8.1% in May", the reasons being global energy prices, food prices "partly reflecting the importance of Ukraine and Russia among the world's leading producers of agricultural goods", "re-intensification of supply bottlenecks, recovery of domestic demand, particularly in services, amid the reopening of the euro area economy"* (ECB, 2022). After an uncertain 2023 for inflation, in early 2024, the ECB reckoned that *"core inflation eased further in January as the impact of past supply shocks continued to fade and tight monetary policy*

dampened demand", but "domestic inflationary pressures are still elevated, partly as a result of robust wage dynamics and falling labour productivity". (ECB, 2024a).

b. In the United States, the Federal Reserve System's (FED) Monetary Policy Report, analyzing the price situation in 2021, found in early 2022 that the price index for personal consumption expenditures had risen 5.8 percent in the 12 months ending December 2021, and the index excluding food and energy had risen 4.9 percent, these were *"the highest values for both measures in about 40 years"*, and inflation pressures were due to *"commodity prices, which are facing both supply chain bottlenecks and strong demand, such as for cars and furniture, high wage growth in some service sectors and a significant increase in housing rents"*. (FED, 2022). One year later, in 2023, looking at price developments in 2022, the EDF found that the consumer price index was falling, yet it was still higher than in the pre-pandemic years (Consumer price inflation as measured by the 12-month change in the index for personal consumption goods prices, was 5.4% in January, down from its peak of 7% in June last year but still well above the FOMC's 2% target, and prices of goods included in core inflation, which excludes volatile commodity prices such as food and energy, dropping to 4.7%. The causes for the inflationary wave to continue into 2022 were supply chain bottlenecks, commodity price increases, basic services prices such as housing/rent services, labour market slack *"in tight areas"* (FED, 2023). The moderation of the inflationary wave in 2023 is explained by oil prices being below 2022 levels (although the redirection of shipping away from the Red Sea *"had put some upward pressure on oil prices"*), falling natural gas prices due to high production, slowing food prices due to lower agricultural and livestock commodity prices, moderating supply bottlenecks, lower import prices, decelerating rent growth, easing labour demand and improving labour supply, as evidenced in the March 2024 Federal Reserve System (FED) Monetary Policy Report notes. (FED, 2024)

c. A more detailed analysis of the inflationary wave affecting the global economy between 2021 and 2023 can be found in the annual reports of the International Monetary Fund (IMF), World Economic Outlook. Thus, in its October 2021 World Economic Outlook, subtitled *Recovery During A Pandemic*, the IMF, considered the inflationary crisis to begin in 2021 as a result of (1) rising global food prices, but also local shortages in some countries in sub-Saharan Africa and the Middle East and Central Asia, (2) pandemic-induced supply-demand mismatches and commodity price increases, (3) developments related to some national policies (such as *"the expiry of the temporary value-added tax rebate in Germany, rents in the US, the expiry of mortgage moratoria in some jurisdictions"*), (4) exchange rate depreciation, which contributed to higher prices of imported goods, (5) *"supply bottlenecks, caused by the sharp contraction in demand in 2020, which led many companies to reduce orders of intermediate inputs, and the recovery in 2021 that made some manufacturers unable to rapidly increase supply flows (e.g., microchip production), and, in addition, the global distribution of shipping containers became highly distorted during the pandemic or blocking their usual routes, which increased delays in delivery times (the closure of the Suez Canal, port restrictions in China following the COVID-19 outbreaks, congestion at ports in Los Angeles and Long Beach)"* [later, the series of these factors, were expanded in the 2022 IMF report, adding factory closures due to outbreaks, congested shipping lanes, worker shortages due to caretakers or dependent care responsibilities, etc.], (6) rising oil prices (in 2021, nearly 60% above 2020 baseline), (7) rising non-oil commodity prices (increasing nearly 30% above 2020 levels) (IMF, 2021).

A year later, the IMF, in its World Economic Outlook, entitled *War Sets Back The Global Recovery*, published in April 2022, estimated that global inflation would rise above the 2021 forecast due to the impact of the war in Ukraine and the extension of price

pressures. Thus, the IMF sees the conflict in Eastern Europe having a prolonged impact on commodity prices, affecting oil and gas prices more severely in 2022 and food prices by 2023 (due to the delayed impact of the 2022 harvest). The war in Ukraine and sanctions against Russia and Belarus have led to disruption of both food supplies and agricultural inputs such as potash fertiliser, futures markets indicate that oil and gas prices will rise rapidly in 2022 (by 55 and 147% respectively) and added uncertainty to the forecast, making commodity prices volatile in the 2022-2023 outlook. Also in the same paper, the IMF notes that "*core inflation, which excludes food and energy prices, has exceeded pre-pandemic rates in most economies, increasing most where recoveries have been strongest. It also notes that during 2022 "demand is expected to weaken, consistent with the moderate recovery and the withdrawal of extraordinary policy support overall, and that [...] supply bottlenecks will ease as production responds to higher prices"*, but that "*recurrent bottlenecks in China as a result of the zero-COVID strategy, the war in Ukraine, sanctions against Russia could prolong disruptions in some sectors until 2023"*, hence price increases, and that these will add "*to the lack not only of energy supply but also of key production inputs such as rare metals and gas"*. The 2022 IMF report, noting, referring to prices in 2021, that the services market has been severely disrupted by pandemic restrictions on people and people's spending has shifted to goods and that this change has overlapped with supply bottlenecks, leading to strong pressures on commodity prices (IMF, 2022).

In the April 2023 World Economic Outlook, subtitled A Rocky Recovery, the IMF, analysing the global inflation situation during 2022, considered that inflation had declined, owing to falling fuel and energy commodity prices, particularly in the United States, the Eurozone and Latin America, the fact that, to curb demand and price increases, most central banks around the world have been raising interest rates rapidly at a faster pace, both overall and core inflation rates (excluding volatile prices) remain at roughly double pre-2021 levels and well above target in almost all inflation-targeting countries (IMF, 2023).

d. In Romania, the National Bank (NBR), in its 2021 Annual Report, considered that the annual inflation rate in 2021, at 8.19% (compared to 2.06% in 2020), was "80%" explained by the increase in natural gas, electricity and fuel prices and stated that "*with the gradual easing of restrictions imposed in the context of the pandemic, global demand for energy goods has recovered, and on the European gas market this has been superimposed on a lower level of stocks"*, as the quantities imported from the main supplier could not be replenished. The effects spilled over to the electricity market, all the more so as thermal power plants using this type of fuel played an important role in the energy mix in 2021, filling in for deficient production from hydro and wind sources, as well as the closure of some coal-fired power plants amid the accelerating transition to a green economy. The latter has amplified the cost of fossil fuel energy production, significantly increasing the prices of carbon emission allowances; compared to the end of 2020, prices on European wholesale markets reached up to four and seven times higher for electricity and natural gas in 2021. In the case of fuels, the Brent price advanced, supported by global demand and relatively low OPEC+ production, but at a slower rate than in 2020. In the non-fuel segment, the increase in prices reflected the gradual reduction in domestic wood supply in recent years, as well as the manifestation of effects associated with demand for alternative energy sources. (NBR, 2021).

In its 2022 Annual Report, the NBR, considered that the annual inflation rate in 2022, at 16.37% (compared to 8.19% in 2021), was explained by "*a series of supply shocks - associated with the impact of the war in Ukraine on commodity prices and the unfavourable agricultural year - with the transmission of pressures into consumer prices facilitated by the aggregate demand surplus in the economy"* (NBR, 2022).

In the February 2024 Inflation Report, the NBR notes that the annual rate of consumer price inflation "*accelerated its downward trajectory in the last quarter of 2023, reaching 6.61% in December*", almost 10% lower than in December 2022) and that the disinflation was the result of "*a combination of factors: keeping commodity prices on a downward slope, abundant domestic and international harvests, the extension and expansion of the list of key food products covered by the trade surplus cap measure. In turn, energy commodity prices have continued to fall in annual terms [...]*" (NBR, 2024a).

3. Money and inflation

There is no doubt that the energy crisis, disruptions in supply chains and the effects of the Russian-Ukrainian war have had the effect of increasing prices, but I believe that one of the main causes of the increase in inflation was and still is the issue of too much money in relation to the volume of goods and services on the market.

The accumulation of a large quantity of money in circulation, in relation to the needs of national economies, with the quantity of goods and services offered on the markets began immediately after the financial crisis of 2007-2008. In order to limit the effects of the crisis and to avoid it spreading to businesses in the real economy, most central banks have been practising so-called quantitative easing policies, whereby they buy financial assets from banks or directly from economic agents with liquidity problems and, in return, supply the economy with large amounts of money. In the United States, the Federal Reserve System (Fed) bought around \$600 billion worth of assets in each of the first three years after the crisis, and since 2012, they have set a monthly target of \$40 billion with asset purchases against dollar issuance, with the target rising to \$85 billion per month the following year. Purchases were halted on 29 October 2014, after the FED had accumulated \$4.5 trillion in assets (Wikipedia, 2024).

Similarly, in the Eurozone, the European Central Bank embarked on large-scale purchases of covered bonds in May 2009 and purchased around €250 billion worth of sovereign bonds from the Member States concerned in 2010 and 2011 (although, until 2015, the ECB refused to openly admit that it was doing quantitative easing). Starting in 2015, the ECB, announced an "extended asset purchase programme" of €60 billion per month from European governments, agencies and institutions, which was planned to last until September 2016 at the earliest, with a total of at least €1.1 trillion, and since 2016, the ECB has increased its monthly bond purchases to €80 billion and included corporate bonds in the assets purchased. The programme continued in subsequent years, so in November 2019, the ECB resumed buying eurozone government bonds at a rate of €20 billion in an effort to encourage governments to borrow more and spend on domestic investment projects (Wikipedia, 2024).

Most central banks have run similar programmes, the main reason being to avoid deflation, which would have plunged national economies into a recession on the scale of 1929-1933. However, the effects of the money issuance of 2008-2016 (even, 2019, in the eurozone) remained, unspent money was accumulating in the accounts of businesses, banks, in the pockets of the population.

2020 and 2021 were the years of the pandemic crisis, when national economies were shut down, the GDP of most countries marked greater or lesser setbacks, but central banks continued to issue currency above needs. For example, in March 2020, to help the economy absorb the shock of the COVID-19 crisis, the ECB announced a €750 billion Emergency Pandemic Purchase Program (EPPP). Across the ocean in the US, the FED announced, on the 15th of March 2020, further quantitative easing of around \$700 billion through asset

purchases to support US liquidity in response to the COVID-19 pandemic, and, as of mid-summer 2020, this resulted in an additional \$2 trillion in assets on its balance sheets (Wikipedia, 2024).

These measures have been replicated in most economies, with central banks implementing similar monetary issuance programmes, which have further crowded the monetary circuits already congested by the excess money issuance generated by the post-2007 anti-crisis policies and the deflation avoidance policies of the middle of the second decade of the millennium.

Of course these money-issuing policies during the COVID-19 pandemic, as well as those applied after 2017 and the deflation-avoidance policies of 2013-2016 have their justifications, but it made sense that sooner or later economies would have to find a new equilibrium, as long as central banks that had issued impressive amounts of money did little to neutralize the potential effects or sterilize the excess.

So this excess money supply began to show its effects on inflation, starting in late 2021, and the continuing crises that had plagued the economy until then turned into an inflationary crisis that exacerbated its effects in 2022, continued at slightly more modest levels in 2023, and looking set to continue into 2024.

Monetary issuance as a cause of inflation has been found in economic studies and theories for over 200 years. At the beginning of the 20th century, Irving Fisher put it into a simple equation, which shows that any additional quantity of money leads to price increases (as the reciprocal is valid) (Faugere, J.P., 2000). 50 years later, Milton Friedman, Nobel Prize winner in economics, postulates that "*inflation is always and everywhere a monetary phenomenon, for which state policy is responsible*" [Bezbakh, P., Inflation, disinflation, deflation, Ed. Humanitas, Bucharest, 1992, p. 43] and that "*inflation occurs when the quantity of money increases visibly faster than output, and the faster the increase in the quantity of money per unit of output, the higher the inflation rate*" (Wheelen, C., 2016). The same Friedman, also proposes a rule of monetary growth "*monetary policy might be better directed by a rule - namely that money grows at a constant rate - rather than in a discretionary manner.*" (Dornbusch., R, Fischer, S., Startz, R., 2007).

4. Money dynamics

Statistics containing information on the money supply measure the size of the money supply by indicators called monetary aggregates. Although there are differences between central banks in the calculation of monetary aggregates, they are, however, generalized (Dardac, N., Barbu, T., 2009):

- M1 monetary aggregate (money supply in the narrow sense), which includes currency in circulation and overnight deposits (current accounts and sight deposits);
- M2 (intermediate money supply), which includes M1 (narrow money supply) and time deposits;
- monetary aggregate M3 (broad money supply), which includes M2 (narrow money supply) and other financial instruments (such as money market fund units, debt securities, etc.).

Romania's case. From the outset it should be noted that the NBR calculates the following monetary aggregates (NBR, 2024b):

- M1, money supply in the narrow sense, contains currency in circulation and overnight deposits;
- M2, intermediate money supply, contains M1 and deposits with an original maturity of up to and including two years (deposits redeemable at notice up to and including three months are also included);

- M3, broad money, consists of M2 and other financial instruments (repo loans, money market fund shares/units, debt securities issued with a maturity of up to and including two years).

From the statistical data in the interactive database on the NBR website, it is possible to see a very high dynamic of the money supply circulating in Romania. Thus:

Table 2. Money dynamics in Romania

Date	billions lei						Increase from previous year - %					
	Currency (NC)	Depozite overnight (DO)	M1	M2	M3	PIB	NC	DO	M1	M2	M3	PIB
Jan. 2007	13,5	38,1	51,6	106,3	106,6	347,0	-	-	-	-	-	-
Dec. 2007	21,4	58,5	79,9	148,0	148,1	418,3	58,9	53,3	54,8	39,3	38,9	20,5
Dec. 2008	25,3	67,3	92,5	173,6	174,0	524,4	17,9	15,0	15,8	17,3	17,5	25,4
Dec. 2009	24,0	55,4	79,4	188,0	189,6	510,5	-5,2	-17,6	-14,2	8,3	9,0	-2,6
Dec. 2010	26,8	54,8	81,6	199,6	202,8	533,9	11,8	-1,1	2,8	6,1	6,9	4,6
Dec. 2011	30,6	55,2	85,8	212,1	216,2	565,1	14,2	0,8	5,2	6,3	6,6	5,8
Dec. 2012	31,5	57,5	89,0	221,8	222,0	595,4	2,8	4,2	3,7	4,6	2,7	5,4
Dec. 2013	34,8	65,5	100,3	241,3	241,5	637,5	10,5	13,9	12,7	8,8	8,8	7,1
Dec. 2014	39,9	78,7	118,6	261,6	261,8	667,6	14,7	20,1	18,2	8,4	8,4	4,7
Dec. 2015	46,5	103,1	149,6	286,1	286,3	712,8	16,5	31,0	26,1	9,4	9,3	6,8
Dec. 2016	54,7	125,3	180,0	314,0	314,1	752,1	17,6	21,6	20,3	9,8	9,7	5,5
Dec. 2017	63,3	147,4	210,6	350,0	350,1	851,6	15,7	17,6	17,0	11,5	11,5	13,2
Dec. 2018	67,7	167,4	235,1	381,1	381,1	959,1	7,0	13,6	11,6	8,9	8,8	12,6
Dec. 2019	74,1	202,8	276,9	422,6	422,6	1.063,8	9,5	21,1	17,8	10,9	10,9	10,9
Dec. 2020	88,2	249,4	337,6	487,3	487,3	1.066,8	19,0	23,0	21,9	15,3	15,3	0,3
Dec. 2021	96,1	310,7	406,8	564,4	564,4	1.189,1	9,0	24,6	20,5	15,8	15,8	11,5
Dec. 2022	101,3	296,8	398,1	603,0	603,0	1.409,8	5,4	-4,5	-2,1	6,8	6,8	18,6
Dec. 2023	110,2	299,1	409,4	667,8	667,8	1.549,9	8,8	0,8	2,8	10,7	10,7	9,9

Source: www.bnr.ro, Data sets, Money supply and author's calculations

- cash in circulation, sight deposits and current account balances, in the 18 years analysed (2016-2023), increase eight times, the M2 aggregate, which includes, in addition to the items mentioned above, term deposits, increases more than 6 times, while Romania's GDP increases about 4.5 times;

- of the 17 years for which increases can be calculated, the relative increases of all aggregates measuring money supply grow faster than GDP measured in current prices in 6, at least one monetary aggregate grew faster than GDP in another 8, and GDP grows faster than money supply in only 3 years, 2008, 2012 and 2022;

Table 3. Romania: Correlations of money with GDP

Date	The ratio between the monetary aggregate growth index and the GDP growth index					The ratio of GDP to the monetary aggregate (the number of rotations of a monetary unit)				
	NC	DO	M1	M2	M3	NC	DO	M1	M2	M3
Jan. 2007	-	-	-	-	-	25,7	9,1	6,7	3,3	3,3
Dec. 2007	1,32	1,27	1,28	1,16	1,15	19,5	7,2	5,2	2,8	2,8
Dec. 2008	0,94	0,92	0,92	0,94	0,94	20,7	7,8	5,7	3,0	3,0
Dec. 2009	0,97	0,85	0,88	1,11	1,12	21,3	9,2	6,4	2,7	2,7
Dec. 2010	1,07	0,95	0,98	1,02	1,02	19,9	9,7	6,5	2,7	2,6
Dec. 2011	1,08	0,95	0,99	1,00	1,01	18,5	10,2	6,6	2,7	2,6
Dec. 2012	0,98	0,99	0,98	0,99	0,97	18,9	10,3	6,7	2,7	2,7
Dec. 2013	1,03	1,06	1,05	1,02	1,02	18,3	9,7	6,4	2,6	2,6
Dec. 2014	1,10	1,15	1,13	1,04	1,04	16,7	8,5	5,6	2,6	2,5
Dec. 2015	1,09	1,23	1,18	1,02	1,02	15,3	6,9	4,8	2,5	2,5
Dec. 2016	1,11	1,15	1,14	1,04	1,04	13,8	6,0	4,2	2,4	2,4
Dec. 2017	1,02	1,04	1,03	0,98	0,98	13,5	5,8	4,0	2,4	2,4
Dec. 2018	0,95	1,01	0,99	0,97	0,97	14,2	5,7	4,1	2,5	2,5
Dec. 2019	0,99	1,09	1,06	1,00	1,00	14,4	5,2	3,8	2,5	2,5
Dec. 2020	1,19	1,23	1,22	1,15	1,15	12,1	4,3	3,2	2,2	2,2
Dec. 2021	0,98	1,12	1,08	1,04	1,04	12,4	3,8	2,9	2,1	2,1
Dec. 2022	0,89	0,81	0,83	0,90	0,90	13,9	4,8	3,5	2,3	2,3
Dec. 2023	0,99	0,92	0,94	1,01	1,01	14,1	5,2	3,8	2,3	2,3

Source: author's calculations using data from www.bnr.ro, Datasets, Money supply

- if we subjectively consider that there can be a deviation of 5% between the indices of GDP and a monetary aggregate respectively, then we can see that in 2007 and 2020, the amount of money in circulation had grown well above the growth of GDP, in two others, 2008 and 2022, money contracts strongly relative to GDP, and in two others, 2012 and 2017, GDP and monetary aggregates evolved in tandem but with minor differences;

- the number of rotations of a monetary unit in a year is decreasing, reaching lows in the pandemic year, but the growth that follows is slow and far from the values of the first year of the interval analysed. For example, the cash in circulation had a velocity of 25.7 (one unit of cash, averaged transactions of 25.7 lei), because the minimum in 2020 assumed that one monetary unit generated transactions of 12.1 lei. That is, less than half. Subsequently, the indicator reverses its trend, but progress is absolutely marginal (for 2023, we record a ratio of one currency unit to transactions of 14.1 lei).

The case of the Eurozone. The European Central Bank calculates the following monetary aggregates: M1, which comprises currency in circulation and overnight deposits, M2, which comprises M1 plus deposits with an agreed maturity of up to two years and deposits redeemable at notice of up to three months, and M3, which comprises M2 plus repurchase agreements, money market fund shares and units, and debt securities with a maturity of up to two years (ECB, 2024b).

As was the case in Romania, the money supply is growing in the Eurozone, but the dynamics are much more modest. Thus:

- cash and overnight deposits increase by 2.5 times, and the M2 aggregate (which includes time deposits) by almost 2 times;

- although developments are more modest than in our country, nevertheless in 7 years (2012, 2014, 2015, 2016, 2018, 2019, 2020), monetary aggregates grow much faster than GDP dynamics, at least one aggregate grows faster than GDP in another 8, and only in 2 (2022 and 2023) does GDP have higher dynamics than monetary aggregates;

- however, if we subjectively consider that there may be deviations between the monetary aggregates and GDP indices of, say, 5%, in most cases they evolve in tandem and with close

values, only in 3 years are divergent developments with large deviations observed: in 2020, the pandemic year, and partly in 2009, when the money supply grows well above GDP, and in 2023, when the money supply contracts quite a lot in relation to GDP;

Table 4. Money dynamics in the Eurozone

Date	Money - billions euro					PIB (billions euro)	Increase from previous year - %					
	Currency (N)	Overnight deposits (DV)	M1	M2	M3		N	DV	M1	M2	M3	PIB
2006	582,13	3.114,42	3.696,55	6.705,28	7.838,83	8.893,19						
2007	625,82	3.213,69	3.839,51	7.356,07	8.647,96	9.386,83	7,5	3,2	3,9	9,7	10,3	5,6
2008	710,87	3.281,82	3.992,69	8.041,92	9.402,54	9.620,16	13,6	2,1	4,0	9,3	8,7	2,5
2009	757,03	3.742,83	4.499,86	8.208,18	9.349,66	9.272,33	6,5	14,0	12,7	2,1	-0,6	-3,6
2010	795,29	3.915,52	4.710,80	8.423,43	9.298,96	9.533,54	5,1	4,6	4,7	2,6	-0,5	2,8
2011	844,80	3.958,29	4.803,08	8.606,63	9.497,90	9.797,74	6,2	1,1	2,0	2,2	2,1	2,8
2012	864,48	4.239,20	5.103,68	8.999,57	9.786,33	9.837,02	2,3	7,1	6,3	4,6	3,0	0,4
2013	910,07	4.475,95	5.386,02	9.211,92	9.832,59	9.935,97	5,3	5,6	5,5	2,4	0,5	1,0
2014	970,35	4.971,06	5.941,41	9.675,44	10.326,08	10.169,84	6,6	11,1	10,3	5,0	5,0	2,4
2015	1.037,86	5.574,82	6.612,68	10.217,57	10.842,91	10.523,62	7,0	12,1	11,3	5,6	5,0	3,5
2016	1.076,64	6.080,99	7.157,63	10.709,55	11.382,09	10.816,81	3,7	9,1	8,2	4,8	5,0	2,8
2017	1.113,00	6.637,24	7.750,23	11.209,46	11.860,29	11.224,92	3,4	9,1	8,3	4,7	4,2	3,8
2018	1.166,13	7.118,27	8.284,40	11.710,32	12.371,40	11.600,16	4,8	7,2	6,9	4,5	4,3	3,3
2019	1.224,49	7.724,36	8.948,85	12.380,67	12.987,39	11.987,12	5,0	8,5	8,0	5,7	5,0	3,3
2020	1.364,00	8.905,46	10.269,46	13.747,13	14.483,23	11.466,66	11,4	15,3	14,8	11,0	11,5	-4,3
2021	1.470,38	9.822,56	11.292,94	14.716,65	15.504,80	12.415,98	7,8	10,3	10,0	7,1	7,1	8,3
2022	1.539,54	9.763,04	11.302,58	15.248,66	16.068,42	13.439,08	4,7	-0,6	0,1	3,6	3,6	8,2
2023	1.536,53	8.834,34	10.370,86	15.139,16	16.137,06	14.296,61	-0,2	-9,5	-8,2	-0,7	0,4	6,4

Source: www.ecb.eu, Statistics, ECB Data Portal, Monetary aggregate

- the number of rotations of a monetary unit also falls in the Eurozone, but they are much smaller, by about a third for cash, by almost half for overnight deposits and by about a quarter for the M2 aggregate.

Table 5. The Eurozone: Correlations of money with GDP

Date	The ratio between the monetary aggregate growth index and the GDP growth index					The ratio of GDP to the monetary aggregate (the number of rotations of a monetary unit)				
	N	DV	M1	M2	M3	N	DV	M1	M2	M3
2006	-	-	-	-	-	15,3	2,9	2,4	1,3	1,1
2007	1,02	0,98	0,98	1,04	1,05	15,0	2,9	2,4	1,3	1,1
2008	1,11	1,00	1,01	1,07	1,06	13,5	2,9	2,4	1,2	1,0
2009	1,10	1,18	1,17	1,06	1,03	12,2	2,5	2,1	1,1	1,0
2010	1,02	1,02	1,02	1,00	0,97	12,0	2,4	2,0	1,1	1,0
2011	1,03	0,98	0,99	0,99	0,99	11,6	2,5	2,0	1,1	1,0
2012	1,02	1,07	1,06	1,04	1,03	11,4	2,3	1,9	1,1	1,0
2013	1,04	1,05	1,04	1,01	0,99	10,9	2,2	1,8	1,1	1,0
2014	1,04	1,09	1,08	1,03	1,03	10,5	2,0	1,7	1,1	1,0
2015	1,03	1,08	1,08	1,02	1,01	10,1	1,9	1,6	1,0	1,0
2016	1,01	1,06	1,05	1,02	1,02	10,0	1,8	1,5	1,0	1,0
2017	1,00	1,05	1,04	1,01	1,00	10,1	1,7	1,4	1,0	0,9
2018	1,01	1,04	1,03	1,01	1,01	9,9	1,6	1,4	1,0	0,9
2019	1,02	1,05	1,05	1,02	1,02	9,8	1,6	1,3	1,0	0,9
2020	1,16	1,21	1,20	1,16	1,17	8,4	1,3	1,1	0,8	0,8
2021	1,00	1,02	1,02	0,99	0,99	8,4	1,3	1,1	0,8	0,8
2022	0,97	0,92	0,92	0,96	0,96	8,7	1,4	1,2	0,9	0,8
2023	0,94	0,85	0,86	0,93	0,94	9,3	1,6	1,4	0,9	0,9

Source: author's calculations using data from www.ecb.eu, Statistics, ECB Data Portal, Monetary aggregate

The US case. In the US (FED, 2021), the Federal Reserve System calculates the following monetary aggregates:

- M1, which is made up of funds that are readily available for spending. M1 consists of (1) currency outside the U.S. Treasury, Federal Reserve Banks, and depository institution vaults; (2) traveler's checks of nonbank issuers; (3) demand deposits; and (4) other deposits, such as balances in negotiable demand draft accounts at depository institutions, credit union share accounts, and demand deposits at savings institutions.

- M2 is composed of a broader set of financial assets held mainly by households. M2 consists of M1 plus (1) savings deposits, (2) small-value time deposits (time deposits in amounts less than USD 100,000) and (3) money market mutual fund accounts.

Table 6. Money dynamics in the United States

Date	Money - billions usd					PIB – billions usd	Increase from previous year - %					
	Currency in circulation (N)	reserve balances (R)	Monetary base (BM)	M1	M2		N	R	BM	M1	M2	PIB
2006	811	16	827	1.367	7.072	13.815,58						
2007	822	15	837	1.373	7.472	14.474,23	1,4	-4,5	1,3	0,5	5,7	4,8
2008	878	788	1.666	1.602	8.192	14.769,86	6,8	5188,6	99,0	16,6	9,6	2,0
2009	924	1.102	2.026	1.693	8.496	14.478,07	5,2	39,8	21,6	5,7	3,7	-2,0
2010	980	1.037	2.017	1.837	8.802	15.048,97	6,0	-5,9	-0,5	8,5	3,6	3,9
2011	1.067	1.553	2.620	2.166	9.660	15.599,73	8,9	49,7	29,9	17,9	9,8	3,7
2012	1.159	1.517	2.676	2.461	10.460	16.253,97	8,6	-2,3	2,1	13,6	8,3	4,2
2013	1.232	2.485	3.718	2.674	11.035	16.880,68	6,4	63,8	38,9	8,7	5,5	3,9
2014	1.328	2.607	3.935	2.956	11.692	17.608,14	7,8	4,9	5,8	10,5	6,0	4,3
2015	1.416	2.420	3.836	3.104	12.351	18.295,02	6,6	-7,2	-2,5	5,0	5,6	3,9
2016	1.501	2.031	3.532	3.345	13.213	18.804,91	6,0	-16,1	-7,9	7,8	7,0	2,8
2017	1.607	2.244	3.851	3.613	13.853	19.612,10	7,1	10,5	9,0	8,0	4,8	4,3
2018	1.709	1.691	3.401	3.764	14.355	20.656,52	6,4	-24,6	-11,7	4,2	3,6	5,3
2019	1.796	1.630	3.427	4.008	15.314	21.521,40	5,1	-3,6	0,8	6,5	6,7	4,2
2020	2.072	3.135	5.207	17.813	19.107	21.322,95	15,3	92,3	51,9	344,4	24,8	-0,9
2021	2.225	4.188	6.413	20.434	21.495	23.594,03	7,4	33,6	23,2	14,7	12,5	10,7
2022	2.299	3.107	5.406	19.756	21.294	25.744,11	3,3	-25,8	-15,7	-3,3	-0,9	9,1
2023	2.335	3.492	5.827	18.022	20.786	27.356,39	1,6	12,4	7,8	-8,8	-2,4	6,3

Source: www.imf.org, International Financial Statistics (IFS), United States

Deposits at depository institutions held by the U.S. government, U.S. and foreign depository institutions, and foreign official institutions are excluded from the calculation of monetary aggregates because monetary aggregates measure money in the hands of the nonbank public in the United States.

As with the Eurozone, money supply is growing, but the dynamics appear to be larger. Thus:

- cash almost triples, the M1 aggregate increases 13-fold, especially in the pandemic year, and M2 triples;

- the annual growth rates of the money supply are constantly outpacing GDP growth, with GDP growing faster than the money supply in only 3 years, 2007, 2022 and 2023;

- however, if we consider, subjectively, that there can be deviations between the monetary aggregates and GDP indices of, say, 5%, in most cases they evolve in tandem and with values that do not exceed 5%, only in 3 years are antagonistic developments observed: in 2009 and 2020, the pandemic year, when the money supply increases above GDP (in 2020 even exponentially) and in 2022, when the money supply contracts quite a lot in relation to GDP;

- the number of revolutions of a monetary unit also falls in the US, by about a third in the case of cash and six times in the case of the M2 aggregate.

Table 7. United States: Correlations of money with GDP

Date	The ratio between the monetary aggregate growth index and the GDP growth index					The ratio between GDP and currency				
	N	R	BM	M1	M2	N	R	BM	M1	M2
2006	-	-	-	-	-	17,0	885,6	16,7	10,1	2,0
2007	0,97	0,91	0,97	0,96	1,01	17,6	971,4	17,3	10,5	1,9
2008	1,05	51,83	1,95	1,14	1,07	16,8	18,7	8,9	9,2	1,8
2009	1,07	1,43	1,24	1,08	1,06	15,7	13,1	7,1	8,6	1,7
2010	1,02	0,91	0,96	1,04	1,00	15,4	14,5	7,5	8,2	1,7
2011	1,05	1,44	1,25	1,14	1,06	14,6	10,0	6,0	7,2	1,6
2012	1,04	0,94	0,98	1,09	1,04	14,0	10,7	6,1	6,6	1,6
2013	1,02	1,58	1,34	1,05	1,02	13,7	6,8	4,5	6,3	1,5
2014	1,03	1,01	1,01	1,06	1,02	13,3	6,8	4,5	6,0	1,5
2015	1,03	0,89	0,94	1,01	1,02	12,9	7,6	4,8	5,9	1,5
2016	1,03	0,82	0,90	1,05	1,04	12,5	9,3	5,3	5,6	1,4
2017	1,03	1,06	1,05	1,04	1,01	12,2	8,7	5,1	5,4	1,4
2018	1,01	0,72	0,84	0,99	0,98	12,1	12,2	6,1	5,5	1,4
2019	1,01	0,93	0,97	1,02	1,02	12,0	13,2	6,3	5,4	1,4
2020	1,16	1,94	1,53	4,49	1,26	10,3	6,8	4,1	1,2	1,1
2021	0,97	1,21	1,11	1,04	1,02	10,6	5,6	3,7	1,2	1,1
2022	0,95	0,68	0,77	0,89	0,91	11,2	8,3	4,8	1,3	1,2
2023	0,96	1,06	1,01	0,86	0,92	11,7	7,8	4,7	1,5	1,3

Source: author's calculations based on data from www.imf.org, International Financial Statistics (IFS), United States

The case of Poland. The monetary aggregates calculated by the Central Bank of Poland (Narodowy Bank Polski) are (NBP, 2024):

- M0, consisting of currency in circulation, current accounts and reserve requirement accounts of banks that do not hold current accounts with the NBP;
- M1, consisting of the amount of currency in circulation and overnight deposits of resident sectors other than monetary financial institutions and central government.
- M2, consisting of M1 and the amount of deposits (zloty and foreign exchange) up to two years' maturity of resident sectors other than monetary financial institutions and central government;
- M3, consisting of M2 and the sum of repurchase agreements, debt securities with an agreed maturity of up to two years issued by resident monetary financial institutions and shares/units issued by resident monetary financial institutions held by residents.

The evolution of monetary aggregates in Poland is quite close to Romania. Thus:

- cash increases almost 5 times, M1 aggregate 6 times, M2 and M3 5 times;
- in 7 years the annual growth rates of money supply continuously exceed GDP growth and only in 2 years, 2022 and 2023, does GDP grow faster than money supply;

Table 8. Money dynamics in Poland

Data	Money (PLN mil.)				GDP (PLN mil.)	Increase from previous year - %				
	M0	M1	M2	M3		M0	M1	M2	M3	PIB
Jan.07	88.649,5	277.433,8	488.060,8	503.574,8	1.069.431	-	-	-	-	-
Dec.07	102.669,4	335.266,2	549.344,3	561.623,8	1.187.508	15,8	20,8	12,6	11,5	11,0
Dec.08	126.350,2	349.943,1	660.239,9	666.231,3	1.285.571	23,1	4,4	20,2	18,6	8,3
Dec.09	137.506,6	388.344,9	714.757,8	720.232,5	1.372.025	8,8	11,0	8,3	8,1	6,7
Dec.10	139.726,8	449.192,0	774.657,9	783.648,5	1.434.368	1,6	15,7	8,4	8,8	4,5
Dec.11	138.129,2	468.052,6	863.745,5	881.496,3	1.553.641	-1,1	4,2	11,5	12,5	8,3
Dec.12	167.205,2	484.813,0	900.336,7	921.412,5	1.612.739	21,0	3,6	4,2	4,5	3,8
Dec.13	164.009,5	555.835,3	960.344,9	978.908,2	1.630.126	-1,9	14,6	6,7	6,2	1,1
Dec.14	191.619,6	606.282,7	1.044.552,9	1.059.015,3	1.700.552	16,8	9,1	8,8	8,2	4,3
Dec.15	212.176,9	692.124,4	1.145.258,8	1.154.992,6	1.798.471	10,7	14,2	9,6	9,1	5,8
Dec.16	220.490,6	815.304,0	1.256.211,9	1.265.661,7	1.853.205	3,9	17,8	9,7	9,6	3,0
Dec.17	231.964,3	906.374,6	1.312.847,3	1.324.368,6	1.982.794	5,2	11,2	4,5	4,6	7,0
Dec.18	292.144,7	1.012.353,1	1.428.233,2	1.446.092,6	2.126.506	25,9	11,7	8,8	9,2	7,2
Dec.19	303.891,5	1.154.871,6	1.552.647,9	1.565.574,7	2.288.492	4,0	14,1	8,7	8,3	7,6
Dec.20	384.125,6	1.531.713,7	1.814.748,9	1.822.727,7	2.337.672	26,4	32,6	16,9	16,4	2,1
Dec.21	451.768,2	1.724.786,8	1.974.496,8	1.984.816,2	2.631.302	17,6	12,6	8,8	8,9	12,6
Dec.22	422.908,8	1.584.901,0	2.078.248,4	2.091.255,5	3.067.495	-6,4	-8,1	5,3	5,4	16,6
Dec.23	451.139,4	1.685.259,9	2.259.343,5	2.268.269,3	3.396.269	6,7	6,3	8,7	8,5	10,7

Source: www.imf.org, International Financial Statistics (IFS), Poland

- as in the other cases, if we consider, subjectively, that there may be deviations between the indices of monetary aggregates and GDP of, say, 5%, there are fewer cases of developments outside the range, in most cases they evolve in tandem and with values not exceeding 5%, only in 3 years are antagonistic developments observed: in 2009 and 2020, the pandemic year, when the money supply grows above GDP (in 2020 even exponentially) and in 2022, when the money supply contracts quite a lot in relation to GDP;

- the number of revolutions of a monetary unit is also falling in Poland, by about a third in the case of M0, M2 and M3 and almost halving in the case of M1.

Table 9. Poland: Correlation of money with GDP

Date	The ratio between the monetary aggregate growth index and the GDP growth index				The ratio between GDP and currency			
	M0	M1	M2	M3	M0	M1	M2	M3
Jan.07	-	-	-	-	12,1	3,9	2,2	2,1
Dec.07	1,04	1,09	1,01	1,00	11,6	3,5	2,2	2,1
Dec.08	1,14	0,96	1,11	1,10	10,2	3,7	1,9	1,9
Dec.09	1,02	1,04	1,01	1,01	10,0	3,5	1,9	1,9
Dec.10	0,97	1,11	1,04	1,04	10,3	3,2	1,9	1,8
Dec.11	0,91	0,96	1,03	1,04	11,2	3,3	1,8	1,8
Dec.12	1,17	1,00	1,00	1,01	9,6	3,3	1,8	1,8
Dec.13	0,97	1,13	1,06	1,05	9,9	2,9	1,7	1,7
Dec.14	1,12	1,05	1,04	1,04	8,9	2,8	1,6	1,6
Dec.15	1,05	1,08	1,04	1,03	8,5	2,6	1,6	1,6
Dec.16	1,01	1,14	1,06	1,06	8,4	2,3	1,5	1,5
Dec.17	0,98	1,04	0,98	0,98	8,5	2,2	1,5	1,5
Dec.18	1,17	1,04	1,01	1,02	7,3	2,1	1,5	1,5
Dec.19	0,97	1,06	1,01	1,01	7,5	2,0	1,5	1,5
Dec.20	1,24	1,30	1,14	1,14	6,1	1,5	1,3	1,3
Dec.21	1,04	1,00	0,97	0,97	5,8	1,5	1,3	1,3
Dec.22	0,80	0,79	0,90	0,90	7,3	1,9	1,5	1,5
Dec.23	0,96	0,96	0,98	0,98	7,5	2,0	1,5	1,5

Source: author's calculations based on data from www.imf.org, International Financial Statistics (IFS), Poland

In Table 10 we have an exercise on what it would mean if the monetary issue in Romania were made in correlation with the evolution of our country's GDP and what the difference would be compared to the currency in circulation. The conclusion is that permanently, and in the case of all monetary aggregates and their components (with the exception of overnight deposits between 2009 and 2013), there has been an excess of money supply that has continuously increased, in the years of the pandemic, 2020 and 2021, coming to represent more than double the money supply required by Romania's GDP, in the case of cash, overnight deposits and the M1 aggregate, which cumulates the two elements.

Table 10. Romania: estimates of excess money

Date	Recalculated money (billion lei), (monetary aggregate*%GDP)					Excess money (billion lei)					% share of excess currency in the effective money				
	NC	DO	M1	M2	M3	NC	DO	M1	M2	M3	NC	DO	M1	M2	M3
Dec. 2007	16,3	46,0	62,2	128,1	128,5	5,2	12,5	17,7	20,0	19,6	31,9	27,2	28,4	15,6	15,2
Dec. 2008	20,4	57,6	78,0	160,6	161,1	4,9	9,6	14,5	13,1	12,9	24,0	16,7	18,6	8,1	8,0
Dec. 2009	19,8	56,1	76,0	156,3	156,9	4,1	-0,7	3,4	31,7	32,8	20,8	-1,3	4,5	20,3	20,9
Dec. 2010	20,8	58,7	79,4	163,5	164,1	6,0	-3,9	2,1	36,1	38,7	29,1	-6,6	2,7	22,1	23,6
Dec. 2011	22,0	62,1	84,1	173,0	173,6	8,6	-6,9	1,7	39,0	42,6	39,3	-11,1	2,1	22,5	24,5
Dec. 2012	23,1	65,5	88,6	182,3	182,9	8,3	-7,9	0,4	39,5	39,1	36,0	-12,1	0,5	21,7	21,4
Dec. 2013	24,8	70,1	94,9	195,2	195,9	10,0	-4,6	5,4	46,1	45,7	40,4	-6,5	5,7	23,6	23,3
Dec. 2014	26,0	73,4	99,3	204,4	205,1	13,9	5,3	19,2	57,2	56,7	53,7	7,2	19,4	28,0	27,6
Dec. 2015	27,7	78,4	106,1	218,3	219,0	18,8	24,7	43,5	67,9	67,2	67,7	31,5	41,0	31,1	30,7
Dec. 2016	29,2	82,7	111,9	230,3	231,1	25,4	42,6	68,1	83,7	83,0	87,0	51,6	60,8	36,4	35,9
Dec. 2017	33,1	93,6	126,7	260,8	261,7	30,2	53,7	83,9	89,2	88,4	91,1	57,4	66,2	34,2	33,8
Dec. 2018	37,3	105,4	142,7	293,7	294,7	30,4	62,0	92,4	87,4	86,4	81,6	58,8	64,7	29,8	29,3
Dec. 2019	41,4	117,0	158,3	325,7	326,9	32,8	85,9	118,6	96,9	95,7	79,2	73,4	74,9	29,7	29,3
Dec. 2020	41,5	117,3	158,8	326,7	327,8	46,7	132,1	178,8	160,7	159,5	112,6	112,6	112,6	49,2	48,7
Dec. 2021	46,2	130,7	177,0	364,1	365,4	49,9	179,9	229,8	200,3	199,0	107,9	137,7	129,9	55,0	54,5
Dec. 2022	54,8	155,0	209,8	431,7	433,2	46,5	141,8	188,3	171,3	169,8	84,8	91,5	89,7	39,7	39,2
Dec. 2023	60,3	170,4	230,6	474,6	476,3	50,0	128,7	178,7	193,2	191,5	82,9	75,6	77,5	40,7	40,2

Source: author's calculations using data from www.bnr.ro, Data sets, Money supply

5. Conclusions

In the last three years, most national economies have experienced high inflation dynamics, beyond the 2% that is considered a benchmark for stability by central banks, which are entrusted by national legislation with the prerogative of ensuring and maintaining price stability. The same central banks, analysing inflation trends from 2021-2023, consider that it is caused by the energy crisis, disruptions in supply chains, the effects of the Russian-Ukrainian war have had the effect of driving up prices, etc. However, although economic theory has for at least two centuries postulated a link between inflation and the quantity of money in circulation, and this link has become a universally recognised fact, as evidenced by the statutes of central banks, which invest them with ensuring price stability, they avoid or evade acknowledging that one of the main causes of the increase in inflation has been, and still is, the issue of too much money in relation to the volume of goods and services on the market.

The accumulation of a large amount of money in circulation, in relation to the needs of national economies, with the quantity of goods and services offered on the markets started immediately after the financial crisis of 2007-2008. In order to limit the effects of the crisis and to avoid it spreading to businesses in the real economy, most central banks have been practising so-called quantitative easing policies, whereby they buy financial assets from banks or directly from cash-strapped economic agents and, in return, supply the economy with large amounts of money. From 2012-16, and in some cases as late as 2019, central banks

continued these policies amid fears that a strong deflation would throw national economies into crisis, Starting in 2020, and then in 2021, the pandemic crisis shut down economies, but central banks continued to issue money. Surpluses of money supply in circulation have accumulated in most economies over the volume of goods and services on offer in the markets. These money supply surpluses began to show their effects on inflation from late 2021 onwards, and the continuing crises that had plagued the economy until then turned into an inflationary crisis that exacerbated its effects in 2022, continued at slightly more modest rates in 2023 and looking set to continue into 2024. This paper analyses money supply developments (through aggregates measuring money supply) in the Eurozone, the US, Romania and Poland. The conclusion is that in all the cases studied, money supply has grown much faster in relation to GDP, and there are many cases where the growth rates of money have been much higher than those of GDP, with the velocity of money even halving. Subsequently from 2022 onwards, the application of anti-inflationary policies began to absorb some of the excess money supply and the velocity of money began to increase, but still in the cases studied there are large volumes of money that will strain inflation for some time.

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ASPECTS REGARDING WORK THROUGH A TEMPORARY EMPLOYMENT AGENT

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***Abstract:** The temporary work agent is a legal person, authorized by the Ministry of Labor and Social Solidarity, which concludes temporary work contracts with temporary employees, to make them available to the user/beneficiary, to work for the period established by the contract of making available under the supervision and its leadership. The operating conditions of the temporary work agent, as well as the authorization procedure, are established by a Government decision.*

***Keywords:** beneficiary, user, temporary employee, temporary work agent.*

***JEL Classification:** K0, K1.*

1. Introduction

According to article 88 of the Labor Code, work through a temporary work agent is the work performed by a temporary employee who has concluded a temporary work contract with a temporary work agent and who is made available to the user to work temporarily under his supervision and management From behind.

Therefore, the temporary employee is the person who concluded a temporary work contract with a temporary work agent, with a view to placing him at the disposal of a user to work temporarily under the latter's supervision and management.

The temporary work agent is a legal person, authorized by the Ministry of Labor and Social Solidarity, which concludes temporary work contracts with temporary employees, to make them available to the user/beneficiary, to work for the period established by the contract of making available under the supervision and its leadership. The operating conditions of the temporary work agent, as well as the authorization procedure, are established by a Government decision.

Therefore, the user is the natural or legal person for whom and under whose supervision and management a temporary employee provided by the temporary work agent works temporarily.

2. The content of the legislative provisions

This form of employment establishes an exception from the determined nature of the employment contract concluded for a period of no more than 36 months.

The temporary work assignment means that period in which the temporary employee is made available to the user to work temporarily under his supervision and direction, for the execution of a precise and temporary task.

According to Article 89 of the Labor Code, a user can call on temporary work agents to perform a precise and temporary task, unless he seeks to replace an employee whose employment contract is suspended as a result of the participation at strike.

According to article 90 paragraph (1), the temporary work assignment is established for a term that cannot exceed 24 months. The duration of the temporary work assignment may be extended for successive periods which, added to the initial duration of the assignment, may not exceed a period of 36 months.

The conditions under which the duration of a temporary work assignment can be extended are provided in the temporary work contract or may be the subject of an addendum to this contract.

The temporary work agent makes available to the user an employee employed through a temporary work contract, based on a contract of making available in written form.

The supply contract must include:

- duration of the mission;
- the specific characteristics of the position, the place of execution of the mission and the work schedule;

- specific working conditions;
- the individual protection and work equipment that the temporary employee must use;

- any other services and facilities in favor of the temporary employee;
- the amount of the commission that the temporary work agent benefits from, as well as the remuneration to which the employee is entitled;
- the conditions under which the user can refuse a temporary employee made available by a temporary work agent.

Any clause prohibiting the user from hiring the temporary employee after the assignment is completed is null and void.

Temporary employees have access to all the services and facilities provided by the user, under the same conditions as his other employees.

The salary received by the temporary employee for each assignment cannot be lower than that received by the user's employee (if they perform the same or similar work as the temporary employee).

The temporary work contract is an individual work contract concluded in writing between the temporary work agent and the temporary employee, for the duration of a mission.

The user is obliged to provide the temporary employee with individual protection and work equipment, except in the case where the supply contract is the responsibility of the temporary work agent.

The legislator also stipulated this possibility, which, however, is extremely rare in practice, given the fact that each beneficiary/user has a specific job, and it is extremely difficult to equip them with protective equipment specific to each risk or occupation.

The same is also ordered regarding the training in the field of safety and health at work of the temporary employee; thus, the introductory-general training is carried out by the temporary work agent, as it concerns general aspects related to work.

With regard to workplace and periodic training, where appropriate, it is carried out by the user/beneficiary, because he knows the specifics of the work and the particularities of the respective position.

To the extent that the user does not employ such an employee, the salary received by the temporary employee will be determined by taking into account the salary of a person employed with an individual employment contract and who performs the same or similar work, as established by the contract work collective applicable to the user.

According to article 93 of the Labor Code, the user cannot benefit from the services of the temporary employee, if he aims to replace an employee whose employment contract is suspended as a result of participating in the strike.

Just like a regular employment contract, the temporary employment contract is an individual employment contract concluded in writing between the temporary employment agent and the temporary employee, for the duration of an assignment.

The temporary employment contract includes:

- the identity of the parties;

- work;
- employer's headquarters/domicile;
- function/occupation, job description, specifying job duties;
- the criteria for evaluating the employee's professional activity;
- job-specific risks;
- the date from which the contract is to produce its effects;
- in the case of a fixed-term employment contract or a temporary employment contract, their duration;
- the duration of the vacation to which the employee is entitled;
- the conditions for granting notice by the contracting parties and its duration;
- the basic salary, other constitutive elements of the salary income, as well as the periodicity of the salary payment to which the employee is entitled;
- normal working hours, expressed in hours/day and hours/week;
- indication of the collective labor contract that regulates the working conditions of the employee;
- duration of the trial period
- the duration of the work period to be performed abroad;
- the currency in which salary rights will be paid, as well as the methods of payment;
- benefits in money and/or in kind related to carrying out the activity abroad;
- climate conditions;
- the main regulations of the labor legislation of that country;
- the customs of the place, the non-compliance of which would endanger his life, freedom or personal safety;
- the worker's repatriation conditions, as the case may be;
- the conditions under which the mission is to be carried out;
- duration of the mission;
- the identity and headquarters of the user;
- the amount and methods of remuneration of the temporary employee.

The temporary employment contract can also be concluded for several assignments, subject to the 24-month term.

The temporary work agent can also conclude an employment contract with the temporary employee for an indefinite period, in which case the temporary employee is at the disposal of the temporary work agent during the period between two assignments. For each new assignment, a temporary employment contract is concluded between the parties.

The temporary employment contract ends at the end of the mission for which it was concluded or if the user renounces his services before the end of the mission.

According to art. 96 of the Labor Code, throughout the duration of the mission the temporary employee benefits from the salary paid by the temporary work agent.

The salary received by the temporary employee for each assignment is determined by direct negotiation with the temporary employment agent and cannot be lower than the minimum gross salary per country guaranteed in payment.

The temporary work agent is the one who withholds and transfers all the contributions and taxes owed by the temporary employee to the state budget and pays for him all the contributions owed under the law.

If the temporary work agent does not fulfill the obligations regarding the payment of salary and contributions and taxes within 15 calendar days, they will be paid by the user, based on the request of the temporary employee.

However, the user who paid the amounts owed in this way, is subrogated, for these amounts, to the rights of the temporary employee against the temporary work agent.

According to article 97 of the Labor Code, the trial period established in the temporary employment contract cannot be longer than:

a) two working days, if the temporary employment contract is concluded for a period less than or equal to one month;

b) 5 working days, if the temporary employment contract is concluded for a period between one month and 3 months;

c) 15 working days, if the temporary employment contract is concluded for a period between 3 and 6 months;

d) 20 working days, if the temporary employment contract is concluded for a period longer than 6 months;

e) 30 working days, in the case of employees in management positions, for a duration of the temporary employment contract of more than 6 months.

During the mission, the user is responsible for ensuring the working conditions for the temporary employee.

The current rules for the authorization and operation of temporary work agents are to be replaced during 2024. Among the legislative changes that will be considered we list: more detailed and numerous conditions to request authorization as a temporary work agent, a longer period long validity of the authorizations, more obligations towards the workers made available and tougher sanctions for violating the legislation in the field.

3. Conclusions

The user shall notify the temporary work agent of any work accident or occupational illness of which he became aware and whose victim was a temporary employee provided by the temporary work agent.

This legislative provision should be amended in the sense that the legislator should require the user to immediately report any work accident or occupational disease of which he became aware and whose victim was a temporary employee, without notifying the temporary employment agent.

This is because the legislation in the field imposes certain communication deadlines (24 hours from production), but also because the user is the one who disposes in his unit.

At the end of the assignment, the temporary employee can conclude an individual employment contract with the user, and if the user hires, after an assignment, a temporary employee, the duration of the performed assignment is taken into account when determining the salary rights, as well as the other rights provided for by labor legislation.

According to article 100 of the Labor Code, the temporary employment agent who dismisses the temporary employee before the term stipulated in the temporary employment contract, for reasons other than disciplinary ones, has the obligation to comply with the legal regulations regarding the termination of the individual employment contract for reasons that do not by the employee.

Temporary employment agencies must not charge any fee to temporary employees in exchange for efforts to recruit them by the user or to conclude a temporary employment contract.

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LEGAL CHARACTERISTICS OF THE SALE

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Abstract: *The Civil Code no longer refers to sale-purchase but only to the sales contract. According to art. 1650 of the Civil Code, the sale is the contract by which the seller conveys or, as the case may be, undertakes to convey to the buyer the property of a good in exchange for a price that the buyer undertakes to pay. A dismemberment of title or any other right may also be conveyed by sale. In addition to these regulations, which make up the "common law", Romanian legislation also includes, in matters of sale and purchase, other rules, of a special character, applicable only to certain sales.*

Keywords: *sale, contract, goods, synalagmatic, translational, onerous.*

JEL Classification: *K0, K1.*

According to art. 1650 of the Civil Code, the sale is the contract by which the seller conveys or, as the case may be, undertakes to convey to the buyer the property of a good in exchange for a price that the buyer undertakes to pay.

As it follows from the definition of the contract, the sale is a consensual, synalagmatic contract (the parties have mutual interdependent obligations), with onerous, commutative and transferable title.

A) is a synalagmatic contract because at the conclusion of the contract mutual and interdependent obligations are born for both parties (seller and buyer). According to art. 1171 of the Civil Code, the contract is synalagmatic when the obligations arising from it are mutual and interdependent. Otherwise, the contract is unilateral even if its execution entails obligations for both parties.

The contract of sale and purchase is "a synalagmatic contract" (bilateral), because it creates mutual obligations between the parties, as follows: the seller undertakes to transfer to the buyer the property of the thing sold or, as the case may be, the right sold, to hand over the good to the buyer and to guarantee the buyer against the eviction and defects of the good, and the buyer undertakes to pay the sale price and take over the purchased good, the performance of one of the parties being the cause of the obligation assumed by the other party.

The reciprocity and interdependence of obligations creates the prerequisites for a presumption of economic balance between the services of the parties to the sale-purchase contract (Rudareanu, 2006, p.88).

The interdependence of obligations is the result of the will of the parties.

As an exception, the law can intervene and ensure the interdependence of obligations and reciprocity by ensuring a balance between the parties, as is Law no. 193/2000 on abusive clauses, thus, in art.1 it is provided that any contract concluded between professionals and consumers for the sale of goods or provision of services will include clear, unambiguous contractual clauses, for the understanding of which no specialized knowledge is required.

In case of doubt about the interpretation of some contractual clauses, they will be interpreted in favor of the consumer.

Professionals are prohibited from stipulating abusive clauses in contracts concluded with consumers (Law no. 193/2000 on abusive clauses in contracts concluded between professionals and consumers, republished in M. Of. no. 543/03.08.2012).

According to art. 2 paragraph 2 of Law no. 193/2000, by professional is meant any authorized natural or legal person, who, based on a contract that falls under the scope of this law, acts in the framework of his commercial, industrial or production activity, artisanal or liberal, as well as any person acting for the same purpose in its name or on its behalf.

The civil code also applies to relations between professionals, as well as to relations between them and any other subjects of civil law, in art. 3 para. 2 professionals are defined as all those who operate an enterprise.

The exploitation of an enterprise constitutes the systematic exercise, by one or more persons, of an organized activity consisting in the production, administration or disposal of goods or in the provision of services, regardless of whether or not it has a profit-making purpose.

According to art. 2 point 3 of Directive 2011/7/EU of the European Parliament and of the Council on combating delays in making payments in commercial transactions (Directive 2011/7/EU of the European Parliament and of the Council on combating late payments in commercial transactions, published in the Official Journal no. 48 L/23.02.2011).

"enterprise" means any organization, other than a public authority, that carries out an independent economic or professional activity, even if that activity is carried out by a single person.

According to art. 2 point 2 of Law no. 72/2013 on measures to combat the delay in the execution of obligations to pay sums of money resulting from contracts concluded between professionals and between them and contracting authorities (Law no. 72/2013 on measures to combat the delay in the execution of obligations to pay sums of money resulting from contracts concluded between professionals and between them and contracting authorities, published in M. Of. no. 182/02.04.2013), professional is - any natural or legal person who operates a business for profit.

The notion of professional is also provided by art. 2 of GEO no. 34/2014 as being any natural or legal person, public or private, who acts in the framework of his commercial, industrial or production, craft or liberal activity in relation to contracts which falls under the scope of this emergency ordinance, as well as any person acting for the same purpose, in its name or on its behalf (GEO no. 34/2014 regarding consumer rights in contracts concluded with professionals, published in M. Of. no. 427/11.06.2014).

B) is a contract with onerous title. It is a "contract with onerous title", because each contracting party seeks to obtain a certain personal patrimonial benefit, that is, the seller wants to receive the price, and the buyer wants to become the owner of the purchased thing.

According to art. 1172 paragraph 1 of the Civil Code, the contract by which each party aims to obtain an advantage in exchange for the assumed obligations is onerous.

C) is a "commutative contract", because, at the time of the conclusion of the contract, the parties know the existence and extent of their mutual obligations, so that there are no chances of gain or loss for one of the parties or for both parties, i.e. the obligations do not depend on a future and uncertain event (hazard).

According to art. 1173 paragraph 1 of the Civil Code, the contract is commutative in which, at the time of its conclusion, the existence of the rights and obligations of the parties is certain, and their extent is determined or determinable. Thus, at the moment of concluding the contract, the existence of the rights and obligations of the parties is certain, and their extent is determined or determinable. Therefore, the commutative contract is characterized by the fact that the mutual benefits to which the parties are obliged are known by the parties at the time of concluding the contract.

The sales contract, being commutative, differs from random contracts that depend on a future and uncertain (uncertain) event, such as: insurance contract, maintenance contract, life annuity contract, sale of litigious rights, etc.

According to art. 1173 paragraph 2 of the Civil Code, the contract is random which, by its nature or by the will of the parties, offers at least one of the parties the chance of a win

and at the same time exposes it to the risk of a loss, which depends on a future and uncertain event.

The contract is random if the existence or extent of the benefits of the parties or only one of them depends on an uncertain future event. The advantages that the parties will obtain or the losses are not known because the parties have committed themselves to each other depending on a future event and uncertain as to its realization or at least the time of its realization. The event constitutes for each of the parties, at the same time, a chance of winning and a risk of loss.

Each of the parties aims to make a profit and avoid incurring a loss, and these chances cannot be evaluated at the time of concluding the contract, but only at the time of fulfillment or non-fulfillment of the event.

The sales contract is commutative as a rule, but there are also exceptions such as the sale of litigious rights "the right is litigious if there is a started and unfinished process regarding its existence or extent" (art. 1653 of the Civil Code).

The litigious right is that right which is the subject of a trial before the court, but also the rights regarding which a dispute may arise in the future (Deak, 1998, p.320).

The sale of litigious rights is a speculative operation, the thing that is the object of the contract is bought at a price below its value due to the uncertainties in which it is located. The seller cannot sell the thing at its real value, but he can sell it, even if at a lower price, he cannot guarantee the existence of the right because he would guarantee winning the lawsuit, which is not possible.

The buyer acquires the litigious right at an advantageous price, at his own risk, but he can obtain a right that, if he wins the lawsuit, the value of the purchased right is higher than the price he paid for it.

D) is a "consensual" contract, because it is considered concluded when the parties have agreed on the thing sold and on the price, that is, the parties have expressed their agreement in this sense. The simple agreement of will is sufficient for the conclusion of the contract to be valid without any other formality.

According to art. 1178 of the Civil Code, the contract is concluded by simple agreement of will of the parties if the law does not impose a certain formality for its valid conclusion.

According to art. 1174 paragraph 2 of the Civil Code, the contract is consensual when it is formed by the simple agreement of the parties.

Thus, in principle, the sale-purchase contract is created by the mutual agreement of the parties, who express their consent to the terms and conditions of the contract, no other formality being necessary for the validity of the contract (Art. 1240 paragraph 1 of the Civil Code. The will to contract can be expressed verbally or in writing).

The will to contract can be expressed verbally or in writing.

The will can also be manifested through a behavior that, according to the law, the agreement of the parties, established practices between them or customs, leaves no doubt about the intention to produce the corresponding legal effects.

The written document confirming the conclusion of the contract can be under a private or authentic signature, having the probative force provided by law (Art. 309 paragraph 2 of the Code of Civil Procedure. No legal act can be proved with witnesses, if the value of its object is greater than 250 lei. However, it is possible to prove with witnesses, against a professional, any legal act, regardless of its value, if it was done by him in the exercise of his professional activity, except in the case where the special law requires written evidence).

According to art. 1242 of the Civil Code, the contract concluded in the absence of the form which, undoubtedly, the law requires for its valid conclusion, is struck by absolute nullity.

If the parties agreed that a contract should be concluded in a certain form, which the law does not require, the contract is considered valid even if the form was not respected.

Except for the cases provided by law or if the will of the parties does not result in the contrary, the property is transferred to the buyer by right from the moment of the conclusion of the contract, even if the good has not been delivered or the price has not been paid yet.

From this rule of consensualism, the law stipulates in the situation of certain contracts the obligation of a certain form in addition to the consensus of the parties in order for those contracts to be validly concluded under the penalty of absolute nullity, such as the conclusion of solemn contracts, i.e. the law stipulates the requirement to fulfill a certain form at the conclusion of the contract to be valid under the penalty of absolute nullity, and at the conclusion of electronic contracts, thus, the contract is solemn when its validity is subject to the fulfillment of some formalities provided by law (art. 1174 paragraph 3 of the Civil Code), as is the case with contracts of alienation by legal documents between households of land within the village or outside the village that must be concluded in authentic form (at the public notary), under the penalty of absolute nullity. This form is required as a condition *ad validitatem*, i.e. that contract to be validly concluded must, under penalty of absolute nullity, be concluded in the form required by law, i.e. authentic³.

In terms of real estate sales, the transfer of property from the seller to the buyer is subject to the provisions of the land deed.

In the case of real estate registered in the land register, proof of ownership is made with the land register extract.

According to art. 557 paragraph 4 of the Civil Code, with the exception of specific cases provided by law, in the case of immovable property, ownership is acquired by registration in the land register⁴.

Registration in the land register is carried out on the basis of the authentic notarial document, the final court decision, the heir certificate or on the basis of another document issued by the administrative authorities, in cases where the law provides for this.

Thus, according to art. 1244 of the Civil Code, in order to be entered in the land register, the agreements that transfer or constitute real rights and which are to be entered in the land register must be concluded by an authentic document, under the penalty of absolute nullity - as is sale - purchase of real estate. Thus, in order to be entered in the land register,

³ According to art. 79 paragraph 1 of Law no. 36/1995, the legal documents for which the law provides the authentic form *ad validitatem* will be drawn up only by public notaries.

⁴ Art. 553 paragraph 2 of the Civil Code, vacant inheritances are ascertained through a succession vacancy certificate and enter the private domain of the commune, city or municipality, as the case may be, without registration in the land register. The buildings in respect of which the right of ownership has been waived according to art. 562 para. (2) they are acquired, without registration in the land register, of the commune, city or municipality, as the case may be, and enter their private domain by the decision of the local council.
Art. 887

Real rights are acquired without registration in the land register when they come from inheritance, natural accession, forced sale, expropriation for reasons of public utility, as well as in other cases expressly provided by law.

However, in the case of forced sale, if the tracking of the property was not previously noted in the land register, the real rights thus acquired will not be able to be opposed to third parties acquiring in good faith,

In the cases provided for in para. (1), the owner of the rights thus acquired will not be able to dispose of them through the land register until after the registration has been made.

contracts that transfer or constitute real rights must be concluded by an authentic document, under the penalty of absolute nullity.

From the analysis of these texts it follows that the sale of real estate (land with or without constructions) must be concluded in authentic form under the penalty of absolute nullity⁵.

The sanction for failure to comply with the form required *ad validitatem* is the absolute nullity of the contract concluded in violation of the legal norm provided by law⁶.

The contract concluded in violation of the law provided by law.

According to art. 45 of Law no. 46/2008, the administrators of the public property forest fund take measures to liquidate the enclaves and correct the perimeter of the forest fund and merge the public property lands through land exchanges based on authentic documents⁷.

According to art. 1242 paragraph 1 of the Civil Code, the contract concluded in the absence of the form that, undoubtedly, the law requires for its valid conclusion, is struck by absolute nullity.

If the parties agreed that a contract should be concluded in a certain form, which the law does not require, the contract is considered valid even if the form was not respected. For example, even if the parties agreed to conclude a contract in the form of an authentic document with the object of a car and in the end concluded the contract in the form of a document under private signature, it is valid because the law does not impose the solemn form in this situation.

The authentic form is not required as a condition *ad validitatem* in the case of sales of cars that are movable goods, but *ad probationem*, that is, the document is necessary to constitute evidence. Deletion and registration is done according to OG no. 78/2000 regarding the homologation, issuance of the identity card and certification of the authenticity of road vehicles in order to sell, register or register them in Romania⁸.

For their commercialization, registration or registration in Romania.

The vehicle identity card contains data about the vehicle and the owners in whose names it was successively registered.

Vehicle data is entered by R.A.R. and, as the case may be, by the holder of the type approval of the entire vehicle.

⁵ Art. 24 paragraph 3 Law no. 7/1996 on the cadastre and real estate advertising, republished in M. Of. no. 83/07.02.2013, amended by Law no. 127/2013 published in M. Of. no. 246/ 29.04.2013, Law no. 214/2013 published in M.Of. no. 388/28.06.2013, Law no. 221/2013 published in M. Of. no. 434/17.07.2013, Law no. 68/2014 published in M.Of.nr.352/13.05.2014, GEO no.8/2014 published in M.Of.nr.151/28.02.2014, GEO no.11/2014 published in M.Of.nr.203/ 21.03.2014.

Order no. 700/2014 regarding the approval of the Regulation on approval, reception and registration in the cadastre and land register records, published in M. Of. no. 571 bis/31.07.2014.

The right of ownership and other real rights over a real estate will be registered in the land register on the basis of the authentic notarial document or the heir's certificate, concluded by a notary public in office in Romania, of the final and irrevocable court decision or on the basis of an act issued by the administrative authorities, in cases where the law provides for this, by which they were established or validly transmitted.

⁶ According to art. 79 paragraph 1 of Law no. 36/1995, the legal documents for which the law provides the authentic form *ad validitatem* will be drawn up only by public notaries.

⁷ Law no. 46/2008 Forestry Code, republished in M.Of. no. 611/12.08.2015, amended by Law no. 232/2016 published in M. Of. no. 972/05.12.2016/, by Law no. 175/2017 published in M.Of. no. 569/18.07.2017.

⁸ OG no. 78/2000 regarding the homologation, issuance of the identity card and certification of the authenticity of road vehicles with a view to their commercialization, registration or registration in Romania, published in M.Of. no. 412/30.08.2000 with subsequent amendments.

Data about the owners are registered by the competent authority that carries out the registration, according to the law.

The competent authority that carries out the registration registers the owner of the vehicle in the owners column of the vehicle's identity card.

When the vehicle is disposed of, its last owner is obliged to hand over the vehicle's identity card to the acquirer.

When deregistering a road vehicle, as a result of its permanent removal from Romania or its disassembly when it is removed from use, the competent authority that carries out the deregistration has the obligation to retain the vehicle's identity card and send it to the R.A.R. On the vehicle's identity card, it is mentioned Vehicle permanently removed from Romania or Vehicle dismantled.

According to art. 1245 of the Civil Code, contracts that are concluded by electronic means are subject to the formal conditions provided by the special law⁹.

Thus, the parties can agree, based on contractual freedom, that the validity of the contract depends on a certain written form. For example, according to art. 6 of Law no. 455/2001 regarding the electronic signature, the document in electronic form to which an electronic signature has been incorporated, attached or logically associated, recognized by the one to whom it is opposed, has the same effect as the authentic act between those who signed it and those who represents their rights.

Regarding the ad probationem form, we specify that, according to art. 309 paragraph 2 of the new Code of Civil Procedure, no legal act can be proved with witnesses, if the value of its object is greater than 250 lei¹⁰.

At the same time, the Civil Code provides in art. 1241 that the document confirming the conclusion of the contract can be under a private or authentic signature, having the probative force provided by law.

E) is a property transfer contract. The contract of sale and purchase is "a transfer contract of ownership" because, through it, the transfer of the right of ownership from the seller to the buyer, i.e. the obligation to give, is carried out.

The seller is obliged to transfer the ownership of the sold good to the buyer.

Along with the property, the buyer acquires all the accessory rights and shares that belonged to the seller.

If the law does not provide otherwise, the provisions relating to the transfer of property are also applied appropriately when a right other than the right of ownership is transferred through the sale (art. 1673 of the Civil Code).

The transferable character of ownership is enshrined by the provisions of art. 1674 Civil Code, according to which, except for the cases provided for by law or if the will of the parties does not result in the contrary, the ownership is transferred by right to the buyer from the moment of the conclusion of the contract, even if the good has not been handed over or the price has not been paid yet.

The transfer of real rights is carried out according to art. 1273 of the Civil Code, thus, real rights are established and transferred by the agreement of the parties, even if the assets

⁹ Law no. 365/2002 on electronic commerce, republished in M. Of. no. 959/29.11.2006. Law no. 455/2001 on the electronic signature, published in M. Of. no. 429/31.07.2001.

¹⁰ Legea nr.134/2010 Codul de procedură civilă, republicată în M.Of.nr.247/10.04.2015, a intrat în vigoare la 15 februarie 2013, modificată prin OUG nr.1/2016 pentru modificarea Legii nr.134/2010 privind Codul de procedură civilă precum și a unor acte normative conexe, publicată în M.Of.nr.85/04.02.2016, modificată prin Legea nr.310/2018 publicată în M.Of.nr. 1074/18.12.2018.

have not been handed over, if this agreement covers certain assets, or by individualizing the assets, if the agreement covers goods of the same kind.

The rule of ownership transfer at the time of consent of the parties applies only to individually determined goods (certain goods), that is, a car, a painting, a computer, etc., even if the good has not been handed over and the price has not been paid.

According to art. 7 point. 42 of the Fiscal Code by transfer is understood - any sale, assignment or alienation of the right of ownership, the exchange of a right of ownership with services or with another right of ownership, as well as the transfer of the fiduciary patrimonial mass within the operation of trust according to the Civil Code¹¹.

According to art. 1275 of the Civil Code, if someone has successively transferred the ownership of a tangible movable asset to several persons, the one who acquired in good faith the effective possession of the asset is the owner of the right, even if his title is dated later.

The acquirer is in good faith who, at the time of taking possession, did not know and could not know the obligation previously assumed by the alienator.

If none of the acquirers has obtained effective possession of the tangible movable property and the claim of each of them for the delivery of the property is enforceable, the one who notified the court first will be preferred.

In terms of real estate sales, the transfer of property from the seller to the buyer is subject to the provisions of the land register (art. 1676 of the Civil Code).

However, according to art. 557 paragraph 4 of the Civil Code, regarding the acquisition of property, in the case of real estate, the right of ownership is acquired by registration in the land register.

And art. 1244 of the Civil Code provides that, apart from other cases provided by law, the agreements that transfer or constitute real rights that are to be entered in the land register must be concluded by authentic document, under the penalty of absolute nullity.

According to the provisions of art. 888 of the Civil Code, registration in the land register is carried out on the basis of the authentic notarial document, the final court decision, the heir's certificate or on the basis of another act issued by the administrative authorities, in cases where the law provides for this. And art. 885 paragraph 1 provides that, subject to legal provisions to the contrary, the real rights over the immovables included in the land register are acquired, both between the parties and towards third parties, only by registering them in the land register, based on the act or the fact that justified the registration.

Disregarding these formalities imposed by law lead to the fact that the right of ownership is not transferred from the seller to the buyer and do not lead to the loss of the transferable nature of the sale, so that, in the case of the sale of immovable property, the property is not transferred at the time of the conclusion of the contract as stipulated art. 1674 of the Civil Code, which represents the rule, but with the fulfillment of the conditions imposed by the law, namely the registration in the land register.

Thus, according to art. 1676 of the Civil Code, in matters of real estate sales, the transfer of property from the seller to the buyer is subject to the provisions of the land register.

From the analysis of the texts it follows that, the acquisition of real estate properties¹² it is done by an authentic document under the penalty of absolute nullity, the transfer of ownership is carried out on the date of entry in the land register, which is made on

¹¹ Law no. 227/2015 on the Fiscal Code, published in M. Of. no. 688/10.09.2015.

¹² Art. 7 point 35 of the Fiscal Code. Law no. 227/2015 on the Fiscal Code, published in M. Of. no. 688/10.09.2015.

real estate - any land, building or other construction erected or incorporated in a land.

the basis of an authentic document, authenticated by the notary public, of a final court decision, which is also an authentic document, pronounced by a court, such as in the case of the pronouncement in a declaratory action, the decision in the case of an inheritance division or division of the assets of the former spouses, a claim action, etc., of an heir certificate or a document issued by the administrative authorities as in the case of the property title issued on the basis of Law no. 18/1991 on the land fund, or the document attesting to a voluntary sharing act.

From the analysis of the texts we can conclude that:

- the right of ownership over an immovable asset is not transferred to the buyer on the date of signing the sale-purchase contract, on the date of delivery of the asset, on the date of payment or any other time agreed by the parties, but as provided by law, upon completion of the registration formalities in the land register.

- the sale-purchase contract is concluded in the form of an authentic document or, as the case may be, by a final court decision¹³.

Thus, according to the text on the transfer of ownership in the case of immovable assets from the seller to the buyer, although the buyer has concluded a sales contract, paid the price and received the asset, he is not the owner of this asset until the acquisition of the property is approved through an administrative procedure provided by Law no. 7/1996, i.e. by registration in the land register, considering that the right of ownership is not transferred by law in the case of real estate, from the seller to the buyer, but based on the text expressly provided by the law.

The question arises, what do people who own land through a title deed and cannot register this land in the land register for various reasons acquire, are they not owners until they are registered in the land register?, what legal regime do they have during this period.

The law implementing the Civil Code clarifies this situation in the provisions of art. 56 of Law no. 71/2011¹⁴, so that, the provisions of the Civil Code regarding the acquisition of real estate rights through the effect of their registration in the land register are applied only after the completion of the cadastral works for each administrative-territorial unit and the opening, on request or ex officio, of the land registers for the respective buildings, in accordance with the provisions of the cadastre and real estate advertising law no. 7/1996¹⁵.

Until this date, the registration in the land register of the right of ownership and other real rights, based on the documents by which they were validly transmitted, constituted or modified, is done only for the purpose of being enforceable against third parties.

The Civil Code provides in art. 885 paragraph 1 of the Civil Code that, subject to legal provisions to the contrary, the real rights over the immovables included in the land register are acquired, both between the parties and against third parties, only by registering them in the land register, based on the act or fact that justified the registration.

¹³ According to art. 885 paragraph 4 of the Civil Code, the final court decision or, in the cases provided by law, the act of the administrative authority will replace the voluntary agreement or, as the case may be, the owner's consent.

¹⁴ Law no. 71/2011 for the implementation of Law no. 287/2009 Civil Code, published in M. Of. no. 409/10.06.2011, GEO no. 79/2011 for the regulation of measures necessary for the entry into force of the Law no. 287/2009, published in M. Of. no. 696/30.09.2011 approved by Law no. 60/2012 published in M. Of. no. 255/ 17.04.2012, modified by GEO no. 1/2016 for the amendment of Law no. 134/2010 on the Code of Civil Procedure as well as some related normative acts, published in M. Of. no. 85/04.02.2016.

¹⁵ Law no. 7/1996 on the cadastre and real estate advertising, republished in M. Of. no. 720/24.09.2015, amended by GEO no. 57/2015, GEO no. 35/2016, Law no. 243/2016, GEO no. 98/2016, Law no. 105/2019. Order no. 700/2014 approves the Regulation on approval, reception and registration in the cadastre and land register records, published in M.Of. no. 571 bis/31.07.2014, modified by Order no. 1340/2015.

This regulation is not a novelty in Romanian legislation, it was also regulated by Decree-Law no. 115/1938, which, at least initially, was designed to be applied throughout Romania, together with the Charles II Civil Code from 1940. Thus, in art. 17 paragraph 1 of Decree-law no. 115/1938 it is stipulated that the real rights over the immovables will be acquired only if between the one who gives and the one who receives the right there is an agreement of will on the constitution or displacement, based on a stated cause, and the constitution or displacement was registered in the land register¹⁶.

According to art. 857 of the Code of Civil Procedure, by adjudicating the building, the adjudicator becomes the owner. From this date, the adjudicator has the right to fruits and revenues, owes interest until full payment of the price and bears all the burdens of the building.

Through tabulation, the adjudicator acquires the right to dispose of the purchased property, according to the rules of the land register.

From the date of registration, the property remains free of any mortgages or other encumbrances regarding the guarantee of receivables, creditors being able to realize these rights only from the price obtained. If the auction price is paid in installments, the encumbrances are extinguished upon payment of the last installment.

Mortgages and other real encumbrances, as well as real rights established after noting the tracking in the land register, will automatically be deleted, except for those for which the adjudicator would agree to be maintained; also, the real rights established after the registration of any mortgage will be deleted *ex officio*, if the sale was made under the conditions provided for in art. 846 para. (7),¹⁷ all notations made with compulsory prosecution, with the exception of the notation of the appeal against the auction minutes, if this was not resolved by the remaining final decision, the prohibition of alienation or encumbrance, if any, as well as the promise to conclude a future contract, if until the date of adjudication, the beneficiary of the promise did not register in the land register the right acquired under the contract that was its object.

If the property was awarded with the payment of the price in installments, the adjudicator will not be able to alienate it or strike it, without the consent of the pursuing creditors, before the full payment of the price.

¹⁶ Decree no. 115/1938 for the unification of provisions regarding land records, published in M. Of. no. 95/27.04.1938, amended by, Law no. 450/1940, Law no. 241/1947 for implementation in Transylvania of the law for the unification of provisions regarding land records of April 27, 1938. Decree no. 378/1960 for the modification of some provisions, in connection with the reorganization of the activity of the State Notary, from Decree no. 40/1953 regarding the notarial succession procedure, Decree no. 2142/1930 for the operation of central land registers for railways and canals, Decree Law no. 115/1938 for the unification of provisions regarding land records, Decree Law no. 511/1938 for the implementation in Bucovina of the law for the unification of provisions regarding land records, Law no. 163/1946 for the provisional replacement of destroyed, stolen or lost land records with land records, Law no. 241/1947 for the implementation in Transylvania of the law for the unification of provisions regarding land records, Law no. 242/1947 for the transformation of provisional land records from the old kingdom into land publicity records, the Code of Civil Procedure and other normative acts, repealed by art. 230 letter g of Law no. 71/2011.

¹⁷ Art.846 (6) If the building is encumbered by any right of usufruct, use, habitation or servitude established after the registration of a mortgage, at the first sale term the calls will start from the highest price offered or, failing that, from the fixed in the publication, reduced by the value of these rights calculated according to art. 837 para. (2)7) If due to the existence of the rights shown in para. (6) a sufficient price could not be obtained to cover the previously registered mortgage claims, calculated according to the data from the land register, the bailiff will resume the auction for the sale of the property free of those rights on the same day; in this case, the calls will start from the price mentioned in the sales publication, without the decrease shown in paragraph. (6).

According to art. 246 of the Criminal Code, the act of removing, through coercion or corruption, a participant from a public auction or the agreement between participants to distort the award price is punishable by imprisonment from one to 5 years¹⁸.

The law also imposes certain conditions and certain formalities in the case of the sale of goods, respectively the transfer of ownership rights in the case of these goods, such as the case of weapons and ammunition¹⁹.

When the object of the sale is goods of the same kind, including goods of a limited kind, the ownership is transferred to the buyer on the date of their individualization by handing over, counting, weighing, measuring or by any other means agreed upon or imposed by the nature of the good.

If, however, several goods are sold in bulk and for a single and global price, the property is transferred to the buyer as soon as the contract has ended, even if the goods have not been individualized.

When selling by sample or model, ownership is transferred at the time of delivery of the good.

The risk of the destruction of the goods sold

If the transfer of ownership operates at the time of consent, the risk of accidental loss of the asset belongs to the buyer, unless the seller had the obligation to deliver the asset and was delayed by the buyer or when the parties agreed that the transfer of the right to property to be realized at another date.

If the good, object of the sale, perishes through a fortuitous event or force majeure, after the parties have agreed, the contract being validly concluded, according to the "res perit domino" principle, the risk of destruction is borne by the buyer, since he became the owner at the moment that the contract was validly concluded. So, the seller will be freed from the delivery obligation, and the buyer will have to pay the price, even if he has not yet received the object of the contract.

At the same time, according to art. 1274 of the Civil Code, in the absence of a contrary stipulation, as long as the asset is not delivered, the risk of the contract remains with the debtor of the delivery obligation, even if the property has been transferred to the acquirer. In case of accidental destruction of the asset, the debtor of the delivery obligation loses the right to consideration, and if he received it, he is obliged to return it.

However, the defaulting creditor assumes the risk of accidental destruction of the asset. He cannot free himself even if he proves that the property has been lost and if the obligation to surrender has been executed on time (Rudareanu, 2006, p. 89).

The Civil Code establishes the general rule according to which the risk is borne by the debtor of the obligation that is impossible to execute, and it applies both to non-translative synalagmatic property contracts and translatable synalagmatic property contracts.

According to art. 558 of the Civil Code, the owner bears the risk of the asset's destruction, if it has not been assumed by another person or if the law does not provide otherwise.

In synalagmatic contracts whose object is the transmission of the right of ownership over a certain asset, the "res perit debitori" rule does not apply, but the "res perit domino" rule, i.e. the risk is borne by the owner.

¹⁸ Law no. 286/2009 on the Criminal Code, published in M. Of. no. 510/24.07.2009, entered into force on February 1, 2014.

¹⁹ Law no. 295/2004 on the arms and ammunition regime, republished in Official Gazette no. 814/17.11.2011 amended by Law no. 288/2011 published in Official Gazette no. 892/2011.

In such contracts, the property is transferred by the effect of the consent of the parties, and the risk of the destruction of the good remains the responsibility of the acquirer, even if the tradition (handover of the thing) has not been made. If the delivery debtor is at fault, the thing perishing after he was delayed in delivering it, the risks are borne by the delivery debtor.

According to art. 1672 of the Civil Code, the seller has the following main obligations: to transfer ownership of the good or, as the case may be, the right sold; to hand over the property; to guarantee the buyer against eviction and defects of the good.

The practical usefulness of the exact determination of the moment of the transfer of ownership lies in the fact that the risk of losing the sold good, due to force majeure, is different, depending on how the good is determined individually (cert) or good of the same kind.

The conditions for the immediate transfer of ownership.

The principle of immediate transfer of ownership (and risks) from the moment the contract is concluded operates only if the following conditions are met:

a) The seller must be the owner of the thing sold, and the contract must be validly concluded.

To be validly concluded, the contract must be concluded in the form required by law, and when the law does not impose a certain form, in the form established by the parties or, where the law does not require simple agreement of will, it is sufficient for a contract to be validly concluded without any other formality.

According to art. 1228 of the Civil Code, in the absence of a legal provision to the contrary, contracts can also apply to future assets.

According to art. 1658 of the Civil Code, if the object of the sale is a future good, the buyer acquires the property at the moment the good is realized²⁰.

Regarding the constructions, the corresponding provisions regarding the land register are applicable²¹.

In the case of the sale of goods of a limited kind that do not exist at the time of the conclusion of the contract, the buyer acquires the property at the time of individualization by the seller of the sold goods. When the good or, as the case may be, the limited kind is not realized, the contract produces no effect.

And art. 1230 provides that the object of the contract can be formed from the property of another, thus, unless the law provides otherwise, the property of a third party can be the object of a benefit, the debtor being obliged to procure them and pass them on to the creditor or, as the case may be, to obtain the consent of the third party. In case of non-execution of the obligation, the debtor is responsible for the damages caused.

According to art. 1683 of the Civil Code, the sale of property to another is regulated, thus, if, on the date of conclusion of the contract on a specific individual property, it is owned by a third party, the contract is valid, and the seller is obliged to ensure the transfer of ownership from its owner to the buyer.

The seller's obligation is considered to have been executed either by his acquisition of the good, or by the ratification of the sale by the owner, or by any other means, directly or indirectly, that procures the buyer ownership of the good.

²⁰ art. 1658 paragraph 5 of the Civil Code the good is considered realized on the date on which it becomes fit to be used according to the destination for which the contract was concluded..

²¹ art. 242 paragraph 3

In the case of real estate that is the subject of the transfer, ownership and other real rights are acquired only by registration in the land register

If the law or the will of the parties does not result to the contrary, the property is transferred to the buyer by right from the moment of the acquisition of the good by the seller or the ratification of the sales contract by the owner.

If the seller does not ensure the transmission of the ownership right to the buyer, the latter can request the resolution of the contract, the return of the price, as well as, if necessary, damages.

When a co-owner has sold the joint property and subsequently does not ensure the transfer of ownership of the entire asset to the buyer, the latter can request, in addition to damages, at his choice, or a reduction of the price proportional to the share he did not acquire- o, or the resolution of the contract in the event that he would not have bought if he had known that he would not acquire ownership of the entire good.

In the mentioned cases, the extent of damages-interest is established, accordingly, according to art. 1702 and 1703 of the Civil Code. However, the buyer who at the time of the conclusion of the contract knew that the good did not belong entirely to the seller cannot request reimbursement of expenses related to autonomous or voluptuous works²².

b) The things that are the subject of the contract must be individually determined (for example: a jewel, a painting, a plot of land, a house, etc.) or determinable. In the case of generically determined goods, the transfer of ownership cannot occur from the moment of the conclusion of the contract because the goods to be effectively acquired by the buyer are not known, the transfer of ownership operates when these goods will exist and will be individualized by measuring, weighing, counting .

Consequently, there is no question of risk transfer either, because things of the kind cannot be lost, they are fungible (can be replaced) and the debtor must hand over goods in the quality and quantity stipulated in the contract. At the stipulated term or, in default at the request of the buyer, the seller must individualize the thing sold and hand it over. Otherwise, he will be liable for the non-execution of the assumed obligation.

In the case of such things, the transfer of ownership (and risks) occurs at the moment of individualization, which is usually done by handing over the thing sold to the buyer (handover that is done in all cases and counts as individualization) but it should not be confused with this, individualization it can also be done by other methods that ensure the identification of things as belonging to the buyer, for example: by labeling the parcels or handing them over to a carrier to be transported to the buyer (Deak, 2001, p.16).

According to art. 1678 of the Civil Code, when the object of the sale is goods of one kind, including goods of a limited kind, the property is transferred to the buyer on the date of their individualization by handing over, counting, weighing, measuring or by any other agreed or imposed method of the nature of the good.

In the case of generic goods, which are sold by weight, measure or number (for example, a quantity of grain, fruit, raw materials, etc.), ownership is transferred from the seller to the buyer at the time of their individualization by counting, measuring or weighing which are usually done at the time of delivery of the good. The risk of accidental loss belongs to the seller who will have to hand over to the buyer a good of the same quality and quantity as the lost one. If the quality is not stipulated in the contract, a medium quality good will be delivered.

²² Art. 581 and 585 of the Civil Code

Art. 578 paragraph 3 letter c

Voluptuous expenses, when they are made for the simple pleasure of the person who made them, without increasing the economic value of the property.

According to art. 1486 of the Civil Code, if the object of the obligation is goods of the same kind, the debtor has the right to choose the goods to be handed over. However, he is only released by handing over goods of at least average quality.

In the case of the sale of similar goods, if the goods, object of the contract, are accidentally destroyed, the seller will not release himself from his obligation, until he hands over to the buyer another quantity of goods of the same kind, because he can procure such goods, according to the principle expressed by the "genera non pereunt" rule.

There are, however, situations in which the object of sale is goods of the same kind by their nature, but which are individualized by the place where they are located (in the warehouse, the silo, the barn in a certain place), thus establishing that all or a particular one is sold part ($\frac{1}{2}$; $\frac{1}{4}$ etc.), the sale being known as: "block sale"²³.

When the transfer of the right of ownership operates at the time of the realization of the agreement of will of the parties.

According to art. 1680 of the Civil Code, when selling by sample or model, ownership is transferred at the time of delivery of the good.

c) The thing sold must exist or exist in the future with certainty. In the case of the sale of future goods (for example: things to be made, a future harvest) although they may form the object of the contract, the transfer of ownership can only operate at the moment when they have been executed, finished, the harvest harvested, in a condition to be handed over to the buyer, if they are individually determined (certain) goods, and if the executed work is of a kind, after individualization by measurement, weighing or counting.

The risks are transferred to the buyer together with the right of ownership, if he has not assumed the risk of non-performance of the future work from the moment of concluding the contract and independently of the transfer of ownership (Deak, 2001, p.17).

According to art. 1228 of the Civil Code, in the absence of a legal provision to the contrary, contracts can also apply to future assets.

According to art. 1658 of the Civil Code, the sale of future goods is regulated, thus, if the object of the sale is a future good, the buyer acquires the property at the moment the good is realized²⁴.

Regarding the constructions, the corresponding provisions regarding the land register are applicable.

In the case of the sale of goods of a limited kind that do not exist at the time of the conclusion of the contract, the buyer acquires the property at the time of individualization by the seller of the sold goods. When the good or, as the case may be, the limited kind is not realized, the contract produces no effect. However, if the non-performance is determined by the seller's fault, he is required to pay damages.

When the good is only partially realized, the buyer has the choice either to request the cancellation of the sale or to claim the corresponding price reduction. The same solution applies in the case of the sale of goods of a limited type, when the limited type was only partially realized and, for this reason, the seller cannot individualize the entire quantity of goods provided for in the contract. If the partial non-realization of the good or, as the case

²³ Art. 1679 of the Civil Code

Bulk sale of goods

If, however, several goods are sold in bulk and for a single and global price, the property is transferred to the buyer as soon as the contract has ended, even if the goods have not been individualized.

²⁴ art. 1658 paragraph 5

the good is considered realized on the date on which it becomes fit to be used according to the destination for which the contract was concluded.

may be, of the limited type was determined by the fault of the seller, he is required to pay damages.

When the buyer has assumed the risk of not realizing the good or the limited type, as the case may be, he remains obliged to pay the price.

The good is considered realized on the date on which it becomes fit to be used according to the destination for which the contract was concluded.

If at the time of the sale of a specific individual good it had completely perished, the contract has no effect. If the good was only partially lost, the buyer who was not aware of this fact at the time of the sale may request either the cancellation of the sale or the corresponding price reduction.

d) the parties or the law have not delayed the transfer of the property. The parties can, through a special clause, postpone the transfer of the property for a moment after the conclusion of the contract. Such clauses can be provided in the contract because the rule established in art. 1674 of the Civil Code, according to which "property is transferred by right to the buyer from the moment the contract is concluded", is not of public order (imperative) and therefore can be modified by the parties even if the thing sold is individually determined, i.e. certain, and the transfer of ownership can take place on another date agreed by the parties.

Thus, the parties can postpone the transfer of ownership until the fulfillment of a suspensive term (until the term of delivery of the thing sold or payment of the price) or until the fulfillment of a suspensive condition. The suspensive term affects the transfer of ownership only if the parties have expressly provided for the postponement of this effect of the sale-purchase contract, and the suspensive condition postpones the transfer of ownership until the event occurs²⁵.

Thus, according to art. 1681 of the Civil Code, the sale is subject to trial when it is concluded under the suspensive condition that, following the trial, the good corresponds to the criteria established at the conclusion of the contract or, in their absence, the destination of the good, according to its nature, and art. 1731 of the Civil Code, the sale of the property in respect of which there is a legal or conventional right of pre-emption can be made to a third party only under the suspensive condition of not exercising the right of pre-emption by the pre-emptor.

According to the provisions of art. 884 paragraph 1 of the Civil Code, real rights under a suspensive or resolutive condition are not enumerated. However, they can register provisionally.

According to art. 2524 paragraph 3 of the Civil Code, if the right is affected by a suspensive condition, the prescription begins to run from the date when the condition was fulfilled.

²⁵ Art. 1400 of the Civil Code

The condition is suspensive when the effectiveness of the obligation depends on its fulfillment.

Art. 1407 of the Civil Code In the case of contracts with continuous or successive execution affected by a resolutive condition, its fulfillment, in the absence of a contrary stipulation, has no effect on the services already executed.

When the suspensive condition produces retroactive effects, in case of fulfillment, the debtor is obliged to perform as if the obligation were simple. The acts concluded by the owner under a suspensive condition are valid and, if the condition is fulfilled, they take effect from the date of their conclusion.

When the resolutive condition produces retroactive effects, in case of fulfillment, each of the parties is obliged to return to the other the benefits they received under the obligation as if it had never existed. The provisions regarding the restitution of benefits are applied accordingly.

The stipulation of a resolutive condition does not affect the transfer of ownership from the moment the contract is concluded to the buyer, but once the condition is met, the seller regains ownership with retroactive effect²⁶.

According to art. 1401 of the Civil Code, "The condition is decisive when its fulfillment determines the abolition of the obligation.

Until proven otherwise, the condition is presumed to be decisive whenever the maturity of the main obligations precedes the moment when the condition could be fulfilled."

If, by agreement between the parties, the transfer of ownership has been postponed for a moment after the conclusion of the contract, the transfer of risks to the buyer is postponed, by virtue of the law, accordingly, even if the parties have expressly referred to both aspects, or only at one of them. The parties can distinguish between the two aspects, for the buyer to assume the risks before the transfer of ownership or for the seller to bear the risks after the transfer of ownership has occurred (for example: during transportation). Such a distinction must result from a clause expressly provided for in the contract (Deak, 2001, p.16).

According to art. 1651 of the Civil Code, the application of some rules from the sale are regulated, thus, the provisions regarding the seller's obligations are applied, accordingly, to the alienator's obligations in the case of any other contract having the effect of transferring a right, if from the regulations applicable to that contract or from those relating to obligations in general do not result otherwise.

The Civil Code also regulates other forms of sale in which the transferable effect of ownership is not linked to the realization of the agreement of wills, according to the rule of common law.

These forms of sale include: the sale of future goods (art. 1658 of the Civil Code); selling snacks; sale on trial.

The sale of future things is provided by art. 1228 of the Civil Code, according to which "contracts can also apply to future goods".

In the case of making the agreement of will regarding the sale of future things (for example, goods that will be manufactured in the future, a future harvest from a plot of land, an orchard), which does not exist at that moment, but which will come into being in the future, the transfer of ownership will be made only when the thing comes into existence.

In the case of such sales, if the object of the contract are individually determined goods (cert goods), the transfer of ownership can be carried out either at the time when the good comes into being, or at the time of delivery of its takeover, as agreed by the parties.

If the good object of the contract is a generic good, ownership is transferred when it is individualized by measurement or weighing.

The alternative sale is the one whose object is two or more things, of which, at the choice of the entitled person, only one or more is selected, but in any case less than the total amount of those objects (Chirica, 1997, p.14), for example, I sell either the Dacia Logan car or the Ford car. As a rule, the choice will be made by the seller who is the debtor of the delivery obligation.

The transfer of ownership, in the case of such a sale, takes place at the time of selection of the thing or things sold.

The sale of snacks is practiced in the case of the sale of food products and drinks. Art. 1682 of the Civil Code states that: "The sale subject to the condition that the good corresponds to the buyer's tastes is concluded only if he has made known his agreement

²⁶ Art. 1407 of the Civil Code

The fulfilled condition is assumed to produce effects retroactively, from the moment the contract is concluded, if the will of the parties, the nature of the contract or the legal provisions do not result to the contrary.

within the term agreed upon or established by custom. If such a term does not exist, the provisions of art. 1681 paragraph 2 shall apply"²⁷.

If the sold good is with the buyer, and he does not pronounce himself within the stipulated term, the sale is considered concluded at the expiration of the term."

If the buyer tastes the product and declares that it does not suit him, the sale is not made, and the seller cannot force him to accept the contract.

The sale on trial is regulated by art. 1681 of the Civil Code, which specifies: "The sale is on trial when it is concluded under the suspensive condition that, following the trial, the good corresponds to the criteria established at the conclusion of the contract or, in the absence of these, the destination of the good, according to its nature.

If the duration of the test has not been agreed upon and custom does not result otherwise, the condition is considered fulfilled if the buyer has not declared that the good is unsatisfactory within 30 days of handing over the good.

If, through the sales contract, the parties have provided that the sold good is to be tested, it is assumed that a trial sale has been concluded." In other words, the sale is subject to a suspensive condition, that of the buyer trying the work. As a rule, this form of sale is practiced when selling cars, machinery, clothing, draft animals, etc.

If, after the test, the buyer finds that the thing does not meet his requirements, the sale is not made. If, however, the buyer declares that the good suits him, the sale is perfected with retroactive effect from the moment when the agreement of will of the parties was made.

If the parties have postponed the transfer of the ownership right through a clause in the contract, through a suspensive term or through a condition, the transfer is postponed until the term is fulfilled or the condition is met. Until the fulfillment of the condition and the fulfillment of the term, the seller remains the owner of the good.

In the case of sales of land and other real estate, the transfer of ownership is transmitted at the time of registration in the land register.

Registration in the land register is necessary for the sale to be enforceable against third parties.

In the case of sales of goods in self-service supermarkets, the contract is considered concluded and the transfer of ownership takes place upon payment of the price at checkout.

If the person who took the good from the shelf does not pay and leaves with the goods, it is not a failure to pay the price of a contract already concluded at the time of placing the goods in the basket, but the commission of the crime of theft (Florescu, 2014).

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²⁷ Art. 1681 paragraph 2 of the Civil Code

If the duration of the test has not been agreed upon and custom does not result otherwise, the condition is considered fulfilled if the buyer has not declared that the good is unsatisfactory within 30 days of handing over the good.

AN ANALYSIS OF SOME MACROECONOMIC INDICATORS OF ROMANIA IN THE CURRENT PERIOD - COMPLETING THE IMAGE

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***Abstract:** Considering the external, geopolitical and economic developments, but also a series of internal challenges in terms of budget deficits and public debt, an analysis of Romania's macroeconomic indicators for the period 2012-2022/2023 can reveal, together with the recent documents of the European Commission regarding developments in Romania, a broader and more accurate picture of the problems and the path to follow in the future for our country. Thus, in addition to the classic macroeconomic indicators, the article tries to highlight Romania's situation in terms of achieving sustainable development goals and how the two approaches (sustainability and stability) can be integrated together. Thus, the challenges are increased because, on the one hand, keeping the budget deficit and public debt under control involves measures to systematize the internal expenditure objectives, and on the other hand, the challenges come strongly from the social sphere and climate changes, which require prompt measures and especially in a first phase the correct formulation of the problems and the priorities regarding them.*

***Keywords:** public deficit, sustainability, public debt, sustainable development parameters.*

***JEL Classification:** H62, E01, E24.*

1. Introduction

Starting from the in-depth analysis of the macroeconomic indicators of the European Commission regarding Romania from the beginning of this year (European Commission, In-Depth Review 2024 Romania) we can analyze whether the economic situation of Romania is worrying or not. For example, the mentioned report points out that there are potential risks and vulnerabilities that can attract attention, such as: large government and external deficits, a substantial slowdown in economic growth, a rather high inflation, although decreasing (7% in December 2023), and, adding to these, a slowdown in the rate of absorption of European funds. However, it is important that not only the macroeconomic parameters evolve accordingly, but also the microeconomic parameters, the social, demographic and environmental parameters to be able to say what is the overall situation of the economic state of Romania. Therefore, in a combined analysis, an analysis of some macro-indicators will be analyzed in tandem, in parallel with a series of sustainable development indicators. The obtained results indicate the syncope of development, but also what should be done in terms of sustainable development so that Romania can at least fall in line with the European average.

2. Description of the problem

Studies and specialized reports at the global, international and national level rarely have in mind the capture of an overall picture. They either focus on monetary or fiscal-budgetary developments, or on social indicators and social policies and of the labor market, or on technology and the impact of artificial intelligence, or on climate and environmental issues and their impact, but they are rarely able to reflect a consolidated image with multiple interrelations. Although a series of macroeconomic elements/indicators relevant to its 17 targets were captured within the sustainable development targets, nevertheless there are numerous macro-indicators that are not captured in their dynamics in relation to the indicators of the 17 sustainable development targets. We remind you that with regard to these goals, they mark: 1. *No poverty*, 2. *Zero hunger*, 3. *Good health and well-being*, 4. *Quality*

education, 5. Gender equality, 6. Clean water and sanitation, 7. Affordable and clean energy, 8. Decent work and economic growth, 9. Industry, innovation and infrastructure, 10. Reduced inequalities, 11. Sustainable cities and communities, 12. Responsible consumption and production, 13. Climate action, 14. Life below water, 15. Life on land, 16. Peace, justice and strong institutions, 17. Partnerships for the Goals. Thus, the article tries to position other macroeconomic indicators in a proper relationship with the targets of sustainable development and to provide a series of explanations regarding the possible interdependencies, interrelationships.

3. Review of the literature

In order to solve some urgent current problems and especially in dealing with speedy problems that led to the formulation of sustainable development targets, international estimates point out that from billions to several of trillions of USD are needed (UNEP, 2011, UNCTAD, 2014; European Report on Development, 2015, etc.) as well as the mobilization and efficient use of funding sources - international, domestic, public and private. In their turn, fiscal policies can contribute to building an ecological economy capable of favoring social inclusion and supporting the achievement of the SDGs through substantial internal public resources, and fiscal space for investments in clean technologies, natural capital and social infrastructure, through fiscal consolidation, reduction of fiscal evasion, appropriate taxation of revenues from the exploitation of natural resources, the appropriate taxation of large polluters and the reduction or complete elimination of subsidies such as those related to fossil fuels, but also the support of subsidies related to water infrastructure, sanitation, energy, green technologies and supporting recycling and reforestation (Anderson and Ekins, 2009; OECD, 2013; Withana et al., 2014; IMF, 2015; United Nations, 2024).

Regarding in particular gender equity of SDGs, the local representation of women and gender responsive budgeting, we can observe in some studies (e.g. Chakraborty, 2014) the fact that placing women in local level governance can change the expenditure decisions of the local bodies and the fact that investment decisions in turn correspond to women's preferences.

4. Methodology and data source

The analysis is based on a comparative study of European data, to highlight the present developments, the data focuses on the period 2012-2022/2023. The monitored indicators are the general macroeconomic indicators, such as economic growth, inflation, labor productivity, gross debt, the current account balance and the budget balance. At the same time, a series of indicators of the sustainable development goals are followed in the analysis in order to outline the possible directions of the links between the two types of indicators that should be in our attention.

Table 1. Description of variables and data sources

Acronym for indicators	Description of indicators	Unit of measurement	Source
RGDPGRNIR	Real GDP growth rate net of inflation rate	Chain linked volumes, percentage change on previous period, inflation reflects annual average rate of change	Eurostat, [tec00115], [tec00118]
PUKHAW	Population unable to keep home adequately warm by poverty status	%	Eurostat, [sdg_07_60]
GGDorS	General government deficit/surplus, Net lending (+) /net borrowing (-)	Percentage of gross domestic product (GDP)	Eurostat, [tec00127]

GGSARD	Government support to agricultural research and development	Euro per inhabitant	Eurostat, [sdg_02_30]
NIIPendi	Net international investment position excluding non-defaultable instruments - % of GDP	Percentage of GDP	Eurostat, [tipsii50]
CANB	Current account, main components, net balance - annual data, % of GDP	Percentage of GDP	Eurostat, [tipsbp11]
GGGD	General government gross debt	Percentage of GDP	Eurostat, [sdg_17_40]
FCEHNPISH	Final consumption expenditure of households and non-profit institutions serving households	Percentage of GDP	Eurostat, [tec00009]
SRUNMEC	Self-reported unmet need for medical examination and care by sex	Percentage	Eurostat, [sdg_03_60]
RGDPpercap	Real GDP per capita	Chain linked volumes (2010), euro per capita	Eurostat, [sdg_08_10]
NEET	Young people neither in employment nor in education and training (NEET), by citizenship	Percentage	Eurostat, [sdg_08_20a]
Stuprojpop	Short-term update of the projected population (2022-2032)	Millions of people	Eurostat, [proj_stp22__custom_10990061]
GVAEGSS	Gross value added in environmental goods and services sector	Percentage of GDP	Eurostat, [sdg_12_61]
RMC	Raw material consumption (RMC)	Tonnes per capita	Eurostat, [sdg_12_21]
PciEUi	Population with confidence in EU institutions by institution	Percentage	Eurostat, [sdg_16_60]
SHWNPG	Seats held by women in national parliaments and governments	Percentage of women	Eurostat, [sdg_05_50]
NLPpperempl	Nominal labour productivity per person employed (ESA 2010)	Percentage of EU27 (from 2020) total (based on million purchasing power standards), current prices	Eurostat, [tec00116]
AFIAWU	Agricultural factor income per annual work unit (AWU)	Index, 2010=100	Eurostat, [sdg_02_20]
ANEftsw	Annual net earnings of a full-time single worker without children earning an average wage	Purchasing power standard (PPS)	Eurostat, [earn_nt_netft__custom_10945817]
Iwarpr	In work at-risk-of-poverty rate	Percentage	Eurostat, [sdg_01_41]

Source: Eurostat indicators, author's systematization

The indicators effectively reflect Eurostat data or are combined in synthetic forms or reported on another basis (e.g. from percent of GDP, in number of inhabitants, or euros per inhabitant, etc.) in order to be able to combine the elements to explain the vision presented in the analysis.

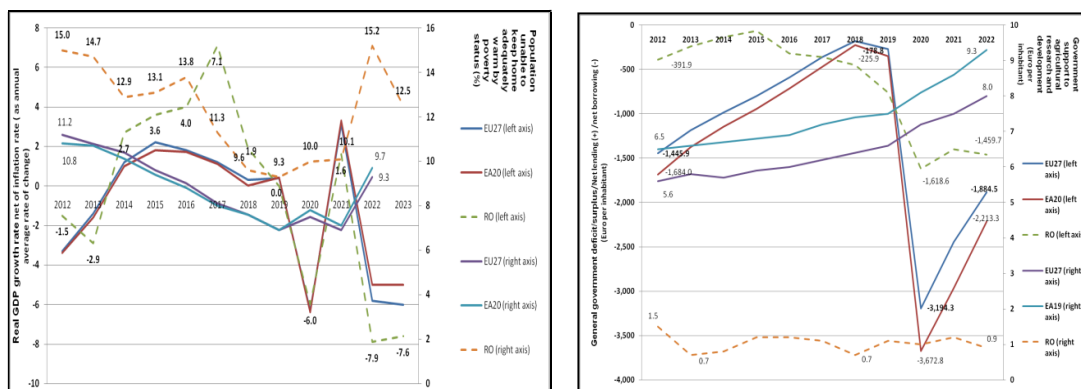
5. Results

Like a perfume with three notes of influence, top, middle and base, studies and especially specialist reports mark as the base note the study of nominal macroeconomic realities, such as inflation, economic growth, current account deficits, budget deficits, etc. Or, it would be normal for the basic focus to fall on sustainability, on the social and environmental impact of economic realities, on the need to first of all correct the elements of a country's sustainable development.

Therefore, the present analysis follows in tandem if and how, at least on the graphic representation, there is an influence between elements of the nominal economy and those of

sustainable development. Thus, we note that for Romania, the real economic growth net of inflation (that is, we take into account the negative influence of both the economic decline and the increase in inflation) we note that in the periods of accelerated economic growth 2014-2017 Romania registered a stronger economic growth than the average EU and the Eurozone, as well, with the outbreak of the COVID-19 crisis, the collapse of Romania's indicator was also of a larger magnitude than the EU average. There is also a time gap in the domestic economy to comply with the changes in the European and international economy. In the mirror, every time the economic growth (adjusted with inflation) suffered, so many times the population's ability to defend itself against the harmful effects of macroeconomic developments decreased.

Figure no. 1. Real economic growth, and the budget balance in relation to the population that cannot afford housing warming up for economic reasons and government support for research in agriculture for Romania



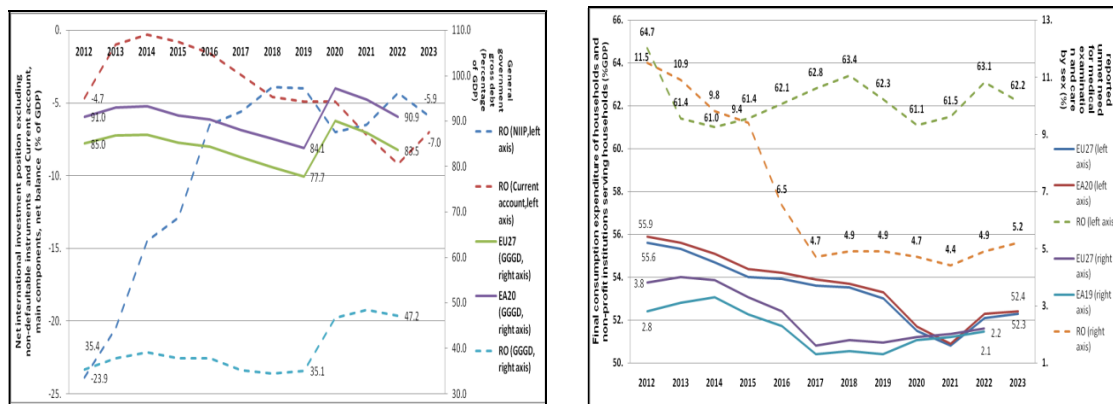
Source: Eurostat indicators, author's processing and conception

Thus we see that the indicator Population unable to keep home adequately warm by poverty status (%) increases in the period when economic growth adjusted with inflation deteriorates. The amplitude is higher for Romania than for the EU and euro zone average, a fact that demonstrates the existence of structural problems that do not allow the reduction of development gaps. We also note that the nominal indicators Romania-EU27 / Euro area are quite well aligned as a trend, regarding the indicator of sustainable development, Romania evolves almost constantly in parallel with the average of the EU27 and the Euro area, having on average for the period 2012-2022 a gap of 3.4 pp. In 2022, the gap seems to have deepened compared to the previous period to 5.9 pp. a fact that should attract the attention of the authorities that the direction of public policies is not appropriate.

Also, if we look at General Government Net lending (+) / net borrowing (-) as a percentage of GDP, we notice that the average at the EU27 level during the analysis period (2012-2022) was 2.6% of GDP compared to a deficit, on average (for 2012-2022), of 3.9% of GDP for Romania. The situation is shown graphically in a unique way by referring to the number of inhabitants. Thus, regarding this indicator, the budget deficit was for the EU27, on average for the analysis period 2012-2022, at 1212.5 euro per inhabitant, while in Romania it was 654 euro per inhabitant, with an extremely worrying level for Romania in 2022 of 1459.7 euro per inhabitant compared to 1884.5 euro per inhabitant for the EU27 and 2213.3 euro per inhabitant for the Euro area. Equally, we notice that the government investment to support

research in agriculture is modest at the level of the EU27 and the euro zone, and even more serious at the level of our country where the trend is in addition to decrease. Thus, the Government support to agricultural research and development indicator stood on average for the period 2012-2022 at 6.4 euro per inhabitant for EU27 and 7.4 euro per inhabitant for EA19 compared to an average of only 1 euro per inhabitant for Romania. In the context of climate changes and the continuous challenges coming from the sphere of unwanted environmental events, against the backdrop of the abolition of public irrigation after 1989, after the fall of the communist regime in Romania, environmental strategies in agriculture in Romania have fallen into disrepute. This aspect should be corrected as quickly as possible by the authorities with the support of non-governmental organizations and farmers' associations in Romania. If we look at Romania in an international context, we notice that the Net international investment position excluding non-defaultable instruments (% of GDP) has improved over the 2012-2023 analysis period, but it is beyond what could be considered sustainable according to international and European standards (-1.7% of GDP for 2023, according to the European Commission, 2023, page 3).

Figure no. 2. Net international investment position, Current account, Final consumption expenditure of households in relation with General government gross debt and Self-reported unmet need for medical examination for Romania



Source: Eurostat indicators, author's processing and conception

Also, the current account, although it recorded during the period of analysis and moments of improvement (2013-2015), the last years marked by the COVID-19 crisis and the war in Ukraine raised the macro-indicator in the sphere of unsustainability.

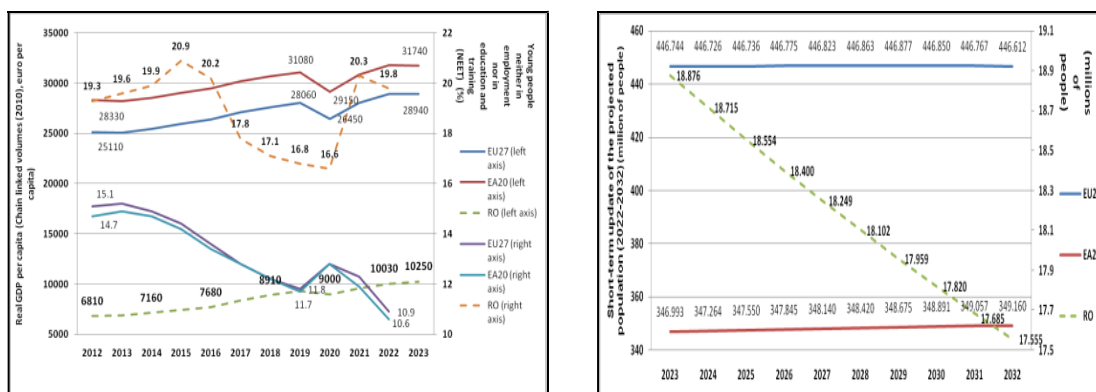
At the same time, against the background of increasing medical expenses and arming efforts, the public debt increased markedly after 2022, reaching 47.2% of GDP in 2023, far above what could be considered sustainable in the medium and long term (in around 40% of GDP, but below the threshold of 60% of GDP imposed by the Maastricht criteria). However, considering the high degree of indebtedness at the level of the EU27 average of 83.5% of GDP and over 90% at the level of the Euroarea, we can consider that there is enough room for maneuver to solve some structural problems in the Romanian economy even and in the context of a modest increase in the public debt in the near future.

If we look at the indicator Final consumption expenditure of households and non-profit institutions serving households, expressed as a percentage of GDP, we observe a constant gap in the analysis period between Romania and EU27 and the euro zone, on average over the analysis period (2012-2023) of 8.9 percentage points, with a not so clear tendency, compared

to the European average, to decrease this consumption. This aspect confirms the continued increased need of the Romanian population to improve the quality of life and comfort in the household. To the same extent, the indicator of sustainable development Self-reported unmet need for medical examination and care by sex demonstrates, despite an improvement in recent years, that there is still a substantial gap compared to the average of the EU27 and the euro area, and that the material factor and inadequate wages affect seriously the ability to solve the health problems of the population.

Despite an almost constant improvement of the real GDP per inhabitant, the gap between Romania and the EU27 average remains substantial at an average of 18,481 euros per capita for the period 2012-2023, in 2023 standing at 18,690 euros per capita. At the same time, the development gap can be seen regarding the youth, Young people neither in employment nor in education and training (NEET) unfortunately deteriorating almost constantly compared to the average of the EU27 and the euro area. Thus, while the indicator decreased in the EU27 from 15.1% in 2012 to 10.9% in 2023, in Romania, the indicator increasing from 19.3 % in 2012 to 19.8% in 2023 (see figure no.3).

Figure no. 3. Real GDP per capita in relation with Young people neither in employment nor in education and training (NEET), and population projections for Romania



Source: Eurostat indicators, author's processing and conception

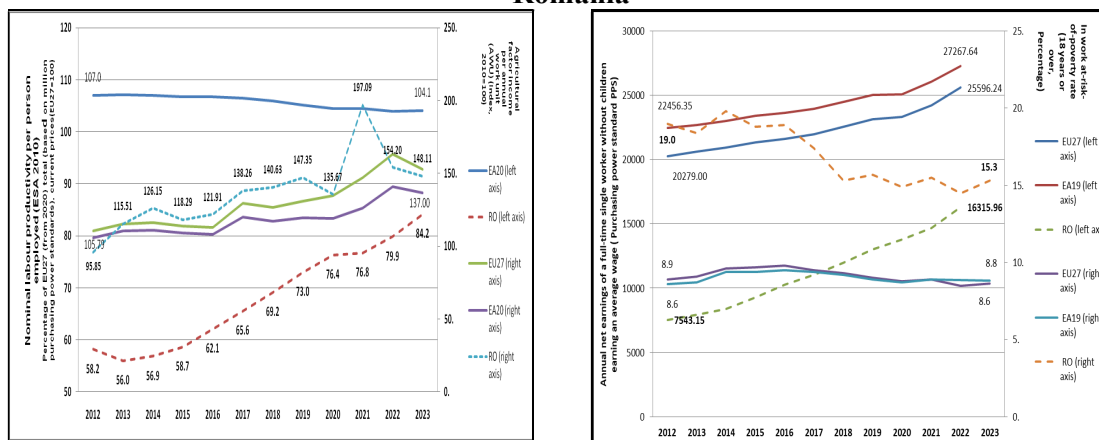
The aspect is all the more worrying as the short-term projection of the population for Romania, based on current trends, is projected by the European authorities in a negative sense for the period 2023-2032. Practically, in addition to a massive depopulation, we are witnessing not only a decrease in the population in general and a decrease in the young population able to work, but also in the involvement in work and education of the population that will be engaged in work for our country. Migration can regulate the situation in the short term, but in the medium and long term, the situation will deteriorate substantially if firm measures are not taken by the authorities now. Demography is not only a social problem, but can become a serious problem of economic gearing and can endanger not only the social security but also the economy and politics of a country.

Regarding labor productivity (see Figure no.4), the Nominal labor productivity per person employed indicator (ESA 100) increased substantially for Romania in relation to the European average (EU27=100) during the analysis period, from 58.2% in 2012 to 84.2% in 2023, percentage of the EU27 average. During all this time, except for the years 2012, 2022-2023, the Agricultural factor income per annual work unit index, indicator of sustainable development, was constantly above the EU27 and Euro zone average for Romania. The

situation reflects the understanding of the importance of the agricultural field for our country, but also the massive investments made in this field in the last decade.

In the context of productivity, salary is also analyzed. Thus, the indicator Annual net earnings of a full-time single worker without children earning an average wage improved from year to year during the analysis period 2012-2022 for Romania, but in 2023 it still shows an important difference of 9280.28 PPS in relation to the EU27 average. The indicator can also be combined with the In work at-risk-of-poverty rate, which, although it has moderated in recent years in Romania, maintains a difference of 7.8 percentage points on average during the period 2012-2023 compared to the EU27 average.

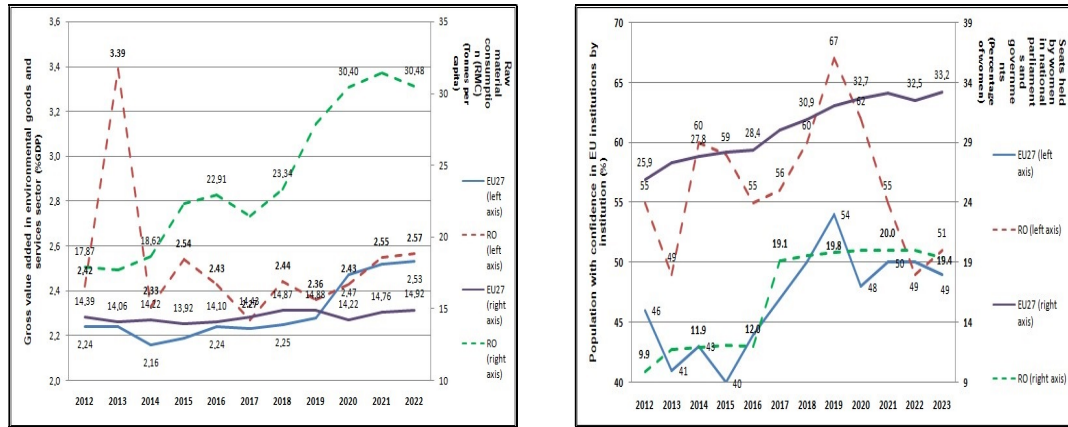
Figure no. 4. Nominal labour productivity per person employed, respectively Annual net earnings of a full-time single worker in relation with Agricultural factor income per annual work unit and respectively with In work at-risk-of-poverty rate for Romania



Source: Eurostat indicators, author's processing and conception

In general, wages are related not only to labor productivity and the poverty level of the population, but also to the yield produced by the economy whose wages are being analyzed. Thus, not only GDP growth but also value added must be taken into account. Thus, having in mind the goals of sustainable development, we also follow the Gross value added in environmental goods and services sector indicator at the EU27 level and in Romania (see Figure no.5). Thus, we observe that the indicator was constantly above 2% of GDP for Romania and registered a positive difference over the entire period of analysis in relation to the EU27 average, with the exception of 2020. Instead, the indicator Raw material consumption (RMC) (Tonnes per capita) seems to have exploded during the analysis period in Romania in relation to the EU27 average, a fact that could indicate the need for more careful management policies of material consumption.

Figure no. 5. Gross value added in environmental goods and services sector in relation with Raw material consumption (RMC), and Population with confidence in EU institutions in relation with Seats held by women in national parliaments and governments for Romania



Source: Eurostat indicators, author's processing and conception

The last two analyzed indicators refer to trust in institutions and equality of opportunities between women and men at the level of representation of citizens in relation to institutions. Although the indicators are only from the sphere of sustainable development, they can easily find their consequences in the sphere of nominal indicators. Trust in institutions, and especially in European institutions (here in the European Parliament) can determine varied attitudes in the process of investing in large-scale, long-term projects alongside the European Union for the consolidation of the national economy, can formulate an attitude of trust or, on the contrary, of detachment compared to the European objectives. Thus, the indicator Population with confidence in EU institutions by institution (here European Parliament) shows the general confidence of Romanians far above the EU27 average level in European institutions, with the exception of the years 2021-2022, when it was probably considered that the consequences of the COVID-19 pandemic could have been better managed. At the same time, at the national level, the representation of women at the level of the parliament and the government during the analysis period had registered a positive trend, with a significant boost after 2016, but in 2023 the indicator for Romania was still considerably below the EU27 average.

6. Conclusions

In general, when a diagnosis is made of an economy or a systematic assessment is made, the macroeconomic indicators analyzed strictly aim at the parameters of the nominal economy. Real or sustainable economic indicators are generally left out of the calculation. Although some of the nominal indicators were introduced in the reports on the sustainable development goals at the European Union level, all the important nominal indicators should be gradually introduced in the sustainable development targets. Thus, the article tries to point out a series of links between these two types of nominal sustainability indicators, and the focus is on the case of Romania for the period 2012-2022/2023.

Thus, if we analyze the nominal parameters at the level of Romania, we notice that they are not substantially different from the developments at the level of the EU27 average or the euro area, on the other hand, regarding the sustainable development indicators, with some

small exceptions, the situation is significantly unfavourable for Romania compared to the average EU27 and the euro zone. Among the indicators that show lagging behind are elements related to comfort and the prevention of energy poverty, health, adequate wages, including for the prevention of poverty in work, education, youth who are neither in the field of work nor in the education system, raw material consumption and equity of representation between women and men in parliament.

The high salary, at a European level, could certainly combat more than half of these problems for Romania, but some aspects far exceed problems related to the income and well-being of employees and citizens, regarding the structural improvement of public policies. The higher salary/wage level is not necessarily a panacea for improving work productivity and reducing work poverty, inflation, the fiscal regime and the pressure of national and local taxes also have an important role in this regard. In general, annually, the government operates to change the minimum wage in the economy upwards, but often the connection with the average wage is lost and the correlation with performance and seniority in the work is missing. These aspects can be considered as real processes of disinvestment in work, leading to migration abroad and to a low productivity of work domestically.

Public policies can improve the parameters of the sustainable development targets for Romania by improving the legislation, the public systems of education, justice, education, culture, medical, defence and public security, but also by improving the cyber security infrastructure and respect for the citizen. With the improvement of the sustainable development targets for Romania, there are real chances to improve the nominal macroeconomic indicators in a sustainable way.

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IDENTIFYING THE RELATIONSHIP BETWEEN MATHEMATICAL PISA SCORE AND FINANCIAL KNOWLEDGE

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Abstract: *Financial education is an essential component in making consumers more accountable, as it helps with the understanding of managing finances, with the purpose of avoiding risks and a possible financial exclusion. This is a key element in rebuilding consumers' confidence in the financial system. In the context of the effects of the financial crisis, European regulators are focusing on higher protection of the consumer regarding financial products and services. Considering that financial education and providing access to basic financial services represent national priorities, it creates a necessity to commence national programs, involving the state, with the purpose of reaching an appropriate understanding of the financial phenomenon. Financial education facilitates maintaining a financial balance, reinforces proper behavior regarding managing income and saving money/investing. The paper at hand shows that the mathematical PISA score impacts the level of financial knowledge.*

Keywords: *PISA, financial education, financial literacy.*

JEL classification: *I22, C21, C22.*

1. Introduction

Financial education supports the need to ensure financially literate individuals, that is, individuals who can make conscious financial decisions (Panos and Wilson, 2020). Financial illiteracy is the inability of people to understand basic financial concepts in making decisions about saving, borrowing, investing, in other words the inability to manage their own income and expenditure budget (Budurin-Furculiță and Iovu-Carauş, 2020).

It is considered that financial literacy should focus on understanding financial issues, in particular personal finance, on one hand, and on the use and application of knowledge in concrete personal contexts, on the other. Thus, the creation of specific financial education programs can be seen as a solution to ensure an adequate level of financial literacy and thus a possibility to mitigate the financial problems that individuals may face in society. Financial literacy plays an important role in financial decision-making and is seen as a phenomenon resulting from financial knowledge, i.e. there is a causal relationship between financial knowledge and financial behavior (Lusardi and Mitchell, 2014).

Financial education aims to develop the ability to understand how money works, the acquisition of a set of skills and knowledge with which individuals can make effective, informed decisions about the financial resources available to them at a given time or in general (Sabău, 2021a).

Financial education in the digital age takes on new dimensions, with the use of IT&C technologies in both electronic banking and trading of financial instruments (Sabău, 2021b). This discipline becomes sustainable due to the use of applications to facilitate money transactions and the multitude of learning materials in the physical and online environments.

In 2003, the OECD initiated an inter-governmental project offering ways to improve standards of financial literacy and education by developing common principles of financial

literacy. In 2008, the OECD launched the International Gateway for Financial Education, a major project to support policy makers and public authorities in the design and implementation of national financial education strategies and individual financial education programs (OECD, 2008). Recent analysis by the European Commission highlights the role that low levels of financial knowledge have played in the global crisis. Financial literacy is very important for everyone, but especially for young people, as financial products and services become increasingly complex.

For these reasons, financial literacy must start at an early age, right from kindergarten. When it comes to children's financial education, they need to learn the value of money and how to spend and invest it early on. The earlier financial education starts for children, the more the results will be evident later. Children need to learn to choose between the desire for something and financial possibility, the importance of saving for the achievement of a more important goal, value, in other words the ratio between effort and satisfaction of a desire (Sabău, 2021a).

In Romania, financial education is at an extremely low level, not only among children, but also adults, as the idea that everyone should have financial literacy is becoming more and more popular (European Commission, 2024). At first, financial education was introduced as an optional subject in 3rd or 4th grades. Subsequently, starting with the 2020-2021 school year, it becomes a compulsory subject for 8th grade students, being included in the subject called "Social Education".

2. Short literature review

The literature contains a large number of scientific papers, which shows that financial education is a particularly important topic. Below, we review some more recent representative studies in this field.

Kaiser and Menkhoff (2020) review the literature on school-based financial literacy courses for children and youth through a quantitative meta-analysis of 37 (quasi-)experiments and find that these programs have, on average, considerable effects on financial literacy, similar to those in other disciplines. They also note a smaller impact on financial behaviors for students. In a similar study, Kaiser et al. (2022) study the literature on financial education programs through a meta-analysis of 76 randomly selected experiments with a total of more than 160,000 individuals, and find that these courses have, on average, positive influences on financial knowledge and financial behaviors. The authors also note that the results are robust to the method used, as only papers published in leading economic journals were retained.

Kuchciak and Wiktorowicz (2021) evaluate the involvement of commercial and cooperative banks in Poland from 2010 to 2019 in financial education activities via social networks using descriptive statistical methods and cluster analysis. The study shows that the extent of banks' adoption of social networks for financial education purposes is increasing, but differs between social networks, and that commercial banks use social networks for financial education more than cooperative banks.

Zhu and Xiao (2022), using Probit regressions, showed that financial education was positively associated with holding risky financial assets in China. Based on the mediating model, financial literacy, economic and financial information seeking, and risk tolerance were found to be mediating factors in the association between financial education and risky financial asset ownership.

Goyal and Kumar (2021) conduct a systematic review coupled with a bibliometric analysis of the scholarly literature on financial literacy. The study includes a review of 502 articles - published in the most prominent journals between 2000 and 2019. Several methods

were used to identify influential papers, delineate the intellectual structure of the field and identify gaps. Three major themes were identified: levels of financial literacy among distinct cohorts, the impact that financial literacy has on financial planning and behavior, and the impact of financial education.

Lusardi (2019) reviews research on financial literacy in terms of both knowledge and financial behavior and shows that financial education is low even in advanced economies with well-developed financial markets. It also describes how financial literacy can be measured, literacy levels around the world, the implications of these findings for financial decision-making, and how financial literacy can be improved.

Amagir et al. (2018) conduct a systematic literature review evaluating the effectiveness of financial education programs and interventions for children and adolescents and describe the key features of designing a successful financial education curriculum. They also show that school-based financial education programs can improve children and adolescents' financial knowledge and attitudes.

Harvey (2019), building on the finding that financial education in the United States remains alarmingly low, examines whether financial education impacts the use of alternative financial services. He finds that financial education mandates have significantly reduced the likelihood and frequency of using alternative financial services.

Xiao and Porto (2017), using a large US dataset with detailed financial domain information, find that financial education can affect financial satisfaction (a subjective measure of financial well-being) through financial literacy, financial behavior, and financial capability variables. The study also shows that subjective financial literacy, desirable financial behavior, and an index of financial capability are strong mediators between financial education and financial satisfaction.

Amari et al. (2020) demonstrate that there are significant effects of demographic factors on financial risk aversion using a sample, which included 516 respondents representing different segments of French households. Moreover, they show that financial literacy moderates the relationships between risk aversion and saving behavior.

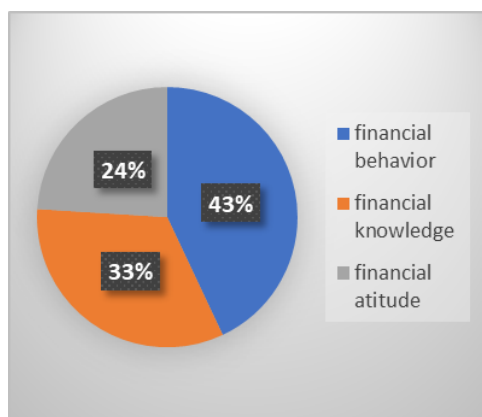
Stolper and Walter (2017) review a large number of studies on the measurement and determinants of financial literacy. They note that previous research documents generally low levels of financial literacy and a high degree of heterogeneity in financial literacy across the population. At the same time, the study suggests that the evidence on the effectiveness of programs is rather disappointing.

Brown et al. (2016) examine the relationship between financial literacy and debt behavior of young adult consumers in the U.S. using Equifax quarterly credit reports from 1999 to 2012. The study demonstrates that financial education has significant effects on young people's debt-related outcomes.

3. Financial education

Study published by OECD on the financial literacy of adults was conducted by analyzing the results of questionnaires in 25 countries, to which 125787 adults, people aged 18 and over, responded. Financial literacy was determined through three components: financial behavior, financial knowledge and financial attitudes.

Interpretation of the data provided by the questionnaire responses yielded an average financial literacy level of 12.7, while the highest level was recorded by Hong Kong-China with 14.8. In ranking the 25 countries participating in the survey, Romania comes out at rank 22 (score 11.2), ahead of Italy (11.1) and Malta (score 10.3).



A maximum of 21 points can be obtained for the three categories of questions, i.e. 9 - for behavior, 7 - for financial knowledge and 5 - for attitude. Therefore, as can be seen from Figure 1 one third of the score is awarded for the level of financial knowledge, about one quarter of the score is awarded for financial attitude and more than 40% of the score is awarded for financial behavior.

Figure1. Structure of literacy level by question category

For a better representation of the scores obtained for each of the literacy components, they will be converted into scores from 1 to 10. Specifically, the scores obtained were related to the number of questions and the resulting value was multiplied by ten.

Table 1. Distribution of countries by financial knowledge, financial behavior and financial attitudes

Crt. no.	Country	Knowledge financial		Behavior finance		Attitude financial	
		1	2*	3	4*	5	6*
1	Austria	5,30	7,57	6,00	6,67	3,10	6,20
2	Bulgaria	4,10	5,86	5,30	5,89	2,90	5,80
3	Czech Republic	4,50	6,43	5,30	5,89	3,10	6,20
4	Columbia	3,80	5,43	4,80	5,33	2,60	5,20
5	Croatia	4,10	5,86	5,30	5,89	2,90	5,80
6	Estonia	4,90	7,00	5,30	5,89	3,10	6,20
7	Georgia	4,50	6,43	5,10	5,67	2,50	5,00
8	Germany	5,20	7,43	5,70	6,33	3,10	6,20
9	Hong Kong	6,20	8,86	5,80	6,44	2,90	5,80
10	Indonesia	3,70	5,29	6,30	7,00	3,30	6,60
11	Italy	3,90	5,57	4,20	4,67	3,00	6,00
12	Korea	4,60	6,57	5,40	6,00	3,10	6,20
13	North Macedonia	3,90	5,57	5,10	5,67	2,80	5,60
14	Malaysia	3,70	5,29	6,10	6,78	2,70	5,40
15	Malta	4,40	6,29	5,30	5,89	3,00	6,00
16	Moldova	4,00	5,71	5,50	6,11	3,10	6,20
17	Montenegro	4,10	5,86	4,70	5,22	2,60	5,20
18	Peru	4,10	5,86	5,10	5,67	2,90	5,80
19	Poland	5,00	7,14	5,50	6,11	2,60	5,20
20	Portugal	4,00	5,71	5,90	6,56	3,20	6,40
21	Romania	3,50	5,00	5,00	5,56	2,70	5,40
22	Russia	4,80	6,86	6,30	7,00	3,60	7,20
23	Slovenia	4,80	6,86	6,30	7,00	3,60	7,20
24	Hungary	4,60	6,57	4,50	5,00	3,30	6,60

Source: OECD (2020). *OECD/INFE 2020 International Survey of Adult Financial Literacy*. Retrieved September 8, 2022., <https://www.oecd.org/financial/education/launchoftheoecdinfeGLOBALfinancialliteracysurveyreport.htm>.

Note: * Data in columns 2, 4 and 6 are converted into scores from 1 to 10.

The average score across all countries surveyed for the financial literacy assessment was 6.29. As can be seen from Table 1 and Figure 2, 12 of the 24 countries scored above or equal to the average score and the rest (50% of the countries surveyed) scored below the average score.

At the same time, the disparity in scores for each of the three categories analyzed: knowledge, behavior and attitude is surprising. In terms of financial knowledge, the highest score is obtained by Hong Kong (6.2), followed by Austria with 5.3 and Germany with 5.2, and the lowest by Romania (3.5).

The assessment of the level of financial knowledge for the surveyed population was based on the answers to seven questions, with a maximum score of 7. The questions covered the following concepts: time value of money, simple and compound interest, how interest is calculated, financial risk and return, understanding inflation, ways of diversifying risks.

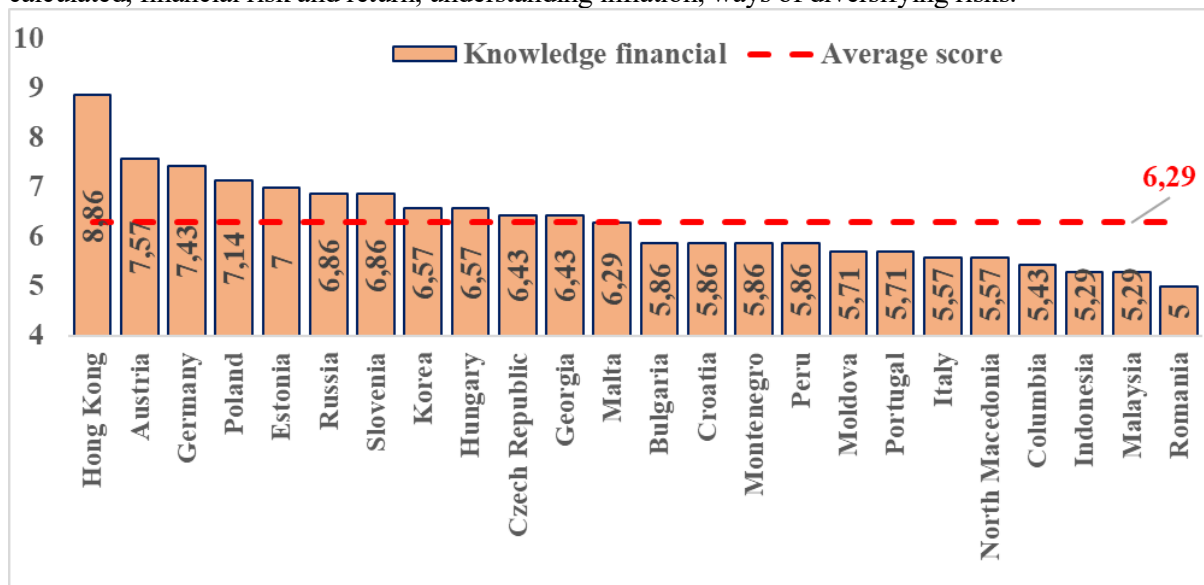


Figure2. Distribution of countries by financial literacy score

Source: Authors' calculations based on data in Table 1, columns (B) and (2).

According to the OECD report (OECD, 2020, p. 20), the percentage of respondents in the countries assessed who know what the time value of money means is 59.9%, the highest percentage being in Germany with 85.9%. In terms of interest paid on a loan, 84.4% of respondents gave the correct answer, with Hong Kong having the highest percentage of people showing an understanding of the concept - 98.9%. When calculating interest, 57.1% of respondents answered correctly, with Hong Kong also having the highest percentage with 95.9%. Survey participants showed poor knowledge of simple and compound interest as only 26.3% of respondents gave the correct answer. In this case, the dispersion of responses is very large, in that 71.1% of Hong Kong respondents gave the correct answer, while in countries such as Colombia and Peru, not even 10% of the adult population showed knowledge of these concepts. For the other three categories of questions, the percentages of correct answers obtained for all respondents were as follows: 58.9% - for knowledge of risk

diversification, 77.1% - for understanding risk and return, and 78% - for understanding inflation.

4. Research methodology. Research results

Financial knowledge must be seen in conjunction with the level of knowledge and application of basic mathematical concepts. The questions in the questionnaire call for knowledge that involves the use of percentages in calculation and present value. Thus, the results obtained can also be analyzed in relation to the results obtained by pupils, future adults, in the PISA tests.

PISA is a survey of 15-year-old students around the world, conducted every 3 years. It assesses the extent to which students have acquired knowledge and skills in reading, mathematics and science – areas of the curriculum considered essential for participation in economic and social activities. PISA not only assesses what students know, but examines how well they can extrapolate what they have learned, with the ability to apply this knowledge in the context of real life.

The PISA program was initiated in 1997. Today, PISA tests are used in a large number of countries, both OECD member countries and countries that are not, but have expressed interest in these assessments (Creța and Șandor, 2016).

PISA tests also provide a picture of students in terms of socio-economic background, family, educational career and financial literacy. Since 2018, PISA tests have also included questionnaires for parents and teachers.

Each participating country assessed a representative sample of students. The sampling procedure involved the selection of at least 150 schools and approximately 42 pupils from each school. Across OECD countries, the number of pupils assessed in 2018 was 600,000 from 79 countries.

The age of 15 was chosen because, in many countries, it is 15-year-olds who make the transition from lower secondary to upper secondary education and because the vast majority of countries specify a compulsory level of education at the age of 15/16.

The PISA assessment of mathematics focuses on measuring students' ability to formulate, use and interpret mathematics in a variety of contexts. These include not only familiar settings related to personal experience (such as preparing food, shopping or watching sports), but also professional, societal and scientific contexts (such as the cost of a project, national interpretation, statistics or modeling of natural phenomena). To succeed in PISA, students must be able to reason mathematically and use mathematical concepts, procedures, facts and tools to describe, explain and predict phenomena. Mathematical competence, as defined in PISA, helps individuals recognize the role that mathematics plays in the world and to make analytical decisions.

Performance in mathematics, described in this way, encompasses more than the ability to reproduce mathematical concepts and procedures learned in school. PISA aims to measure how well students can extrapolate from what they know and how well they apply mathematical knowledge in a range of situations, including new and unfamiliar ones. To this end, in most PISA mathematics assessment tests, units refer to real-life contexts in which mathematical skills are needed to solve a problem. The focus on real-life contexts is also reflected in the ability to use 'tools', such as a calculator, ruler or spreadsheet, to solve problems (such as in a real-life situation).

The 2018 PISA results in mathematics for OECD countries show that more than 76% of students reached level 2. This means that students can perform interpretation and recognition without direct instruction, i.e. they can use basic algorithms, formulas,

procedures, to solve problems involving numbers, such as: calculating the price of an object in another currency, comparing distances for two alternative routes. They can interpret and recognize contexts based on inference, extract information from a single source or use a single mode of representation (graphs, equations, tables). Students can provide interpretation of data. What is important to note is that, in 24 countries, more than 50% of participating students scored below this level.

As for level 6, data from participating countries show that only 2.4% of students in the survey reached this level, while the highest percentages of students who reached level 6 are: 16% in Beijing, Shanghai, Jiangsu and Zhejiang, 14% in Singapore.

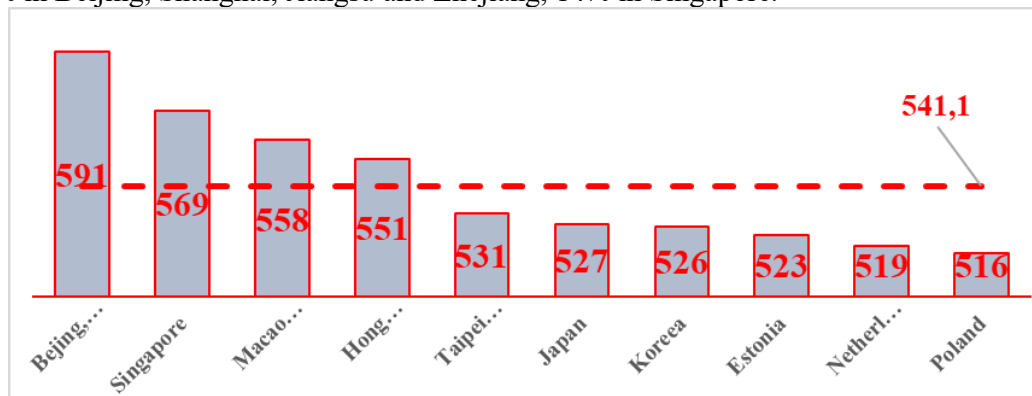


Figure 3. PISA score

Source: Realized by the authors based on information contained in OECD (2019), *PISA 2018 Results (Volume I): What Students Know and Can Do*, PISA, OECD Publishing, Paris. <https://doi.org/10.1787/5f07c754-en>.

In the table below we present the mathematical PISA score and financial literacy scores for the 25 countries.

Table 2. PISA - mathematics and financial literacy scores

Position by PISA score	Country	Mathematical PISA	Scores on knowledge assessment financial
1	Indonesia	379	5,29
2	Columbia	391	5,43
3	North Macedonia	394	5,57
4	Georgia	398	6,43
5	Peru	400	5,86
6	Moldova	421	5,71
7	Montenegro	430	5,86
8	<i>Romania</i>	<i>430</i>	<i>5,00</i>
9	Bulgaria	436	5,86
10	Malaysia	440	5,29
11	Croatia	464	5,86
12	Malta	472	6,29
13	Hungary	481	6,57
14	Italy	487	5,57
15	Russia	488	6,86
16	Portugal	492	5,71
17	France	495	6,86

Position by PISA score	Country	Mathematical PISA	Scores on knowledge assessment financial
18	Austria	499	7,57
19	Czech Republic	499	6,43
20	Germany	500	7,43
21	Slovenia	509	6,86
22	Poland	516	7,14
23	Estonia	523	7,00
24	Korea	526	6,57
25	Hong Kong	551	8,86

Source: Data in the table were collected by the authors from *PISA 2018 Results (Volume I): What Students Know and Can Do*, PISA, OECD Publishing, Paris, <https://doi.org/10.1787/5f07c754-en> and *OECD/INFE 2020 International Survey of Adult Financial Literacy*.

By analyzing the data in Table 2, we can see a correlation between mathematical PISA scores and financial knowledge. In order to show the existence of this link we will use specific statistical methods. In terms of statistical correlation, the mathematical PISA score is the independent variable or factor variable, and financial literacy scores define the dependent variable.

To carry out this research we used the SPSS software package. The application of parametric methods in testing the research hypothesis requires several steps.

First, we test whether the collected data are normally distributed using the Kolmogorov-Smirnov test, for which we obtained the results below.

		Mathematics (PISA)	Financial knowledge (10)
N		25	25
Normal Parameters ^{a,b}	Mean	464,8400	6,3152
	Std. Deviation	49,15170	,88452
Most Extreme Differences	Absolute	,154	,177
	Positive	,106	,177
	Negative	-,154	-,083
Kolmogorov-Smirnov Z		,770	,883
Asymp. Sig. (2-tailed)		,594	,417
a. Test distribution is Normal.			
b. Calculated from data.			

Source: Realized by the authors

As the table above indicates, the data follow a normal distribution, which is highlighted by the Sig. values (p-value) for both the independent variable (PISA, 0.594) and the dependent variable (financial knowledge, 0.417), which are greater than 0.05. In other words, the null hypothesis (H0) is accepted.

After testing the normality of the distribution of the data, we decide which mathematical model expresses the relationship between the two variables using graphical representation.

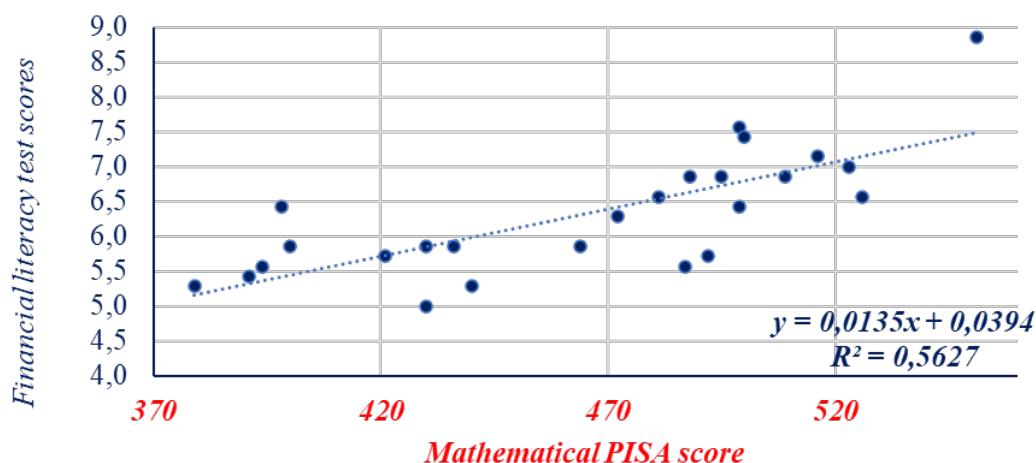


Figure 4. Correlation between mathematical PISA score and financial literacy scores

Source: Realized by the authors

From the analysis of the graph, it can be seen that the relationship between the two variables is direct and linear. Thus, an increase (decrease) in the PISA score in mathematics leads to an increase (decrease) in the financial literacy score.

Next, we test whether the model described above can be validated, and for this purpose we use the ANOVA test. Thus, the model is valid because the probability associated with F-statistic (Sig.) is less than 0.05, as can be seen from Table 4.

Table 4. ANOVA test results^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10,550	1	10,550	29,496	,000^b
	Residual	8,227	23	,358		
	Total	18,777	24			

a. Dependent Variable: Financial knowledge (10)
b. Predictors: (Constant), Mathematics (PISA)

Source: Realized by the authors

It is also necessary to test the significance of the coefficients in the linear model. Coefficients are significant if the probability associated with t-statistic (Sig.) is less than 0.05.

Table 5. t-test results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	,045	1,161		3,039	,015
	Mathematics (PISA)	,013	,002	,750	5,431	,000

Source: Realized by the authors

The regression coefficient (coefficient of the independent variable, 0.013) is positive and significantly different from zero (Sig. value is less than the specific threshold).

Therefore, the relationship between the two variables is directly significant and is described by a linear model. Also, the value of the coefficient of determination (R²) is 0.5627, which shows that the score obtained in the financial literacy assessment is significantly influenced by more than 56% of the score obtained in the PISA mathematics tests.

Finally, we still need to determine the strength of the relationship between the variables studied. For this, we use the Pearson linear correlation coefficient.

		Financial knowledge (10)	Mathematics (PISA)
Pearson Correlation	Financial knowledge (10)	1,000	,750
	Mathematics (PISA)	,750	1,000
Sig. (1-tailed)	Financial knowledge (10)	.	,000
	Mathematics (PISA)	,000	.
N	Financial knowledge (10)	25	25
	Mathematics (PISA)	25	25

Source: Realized by the authors

The probability associated with the Pearson coefficient (Sig.) is much less than 0.05, which shows that the statistical significance of the link is high. The value of the Pearson coefficient (0.75) is positive and large (close to 1), indicating that the link is direct, of high intensity and highly statistically significant.

5. Conclusions

This study sought to identify the relationship between mathematical knowledge as assessed by PISA test scores and financial knowledge as an element of financial literacy. It was shown that there is a direct and linear relationship between the two variables, which means that a change in mathematical PISA test scores generates a change in the financial literacy score in the same direction. Specifically, an increase in the mathematical PISA score by 1 point leads to an increase in the financial literacy score (on a scale from 1 to 10) by 0.013, which is not insignificant given the orders of magnitude of the two assessments. The development of viable financial education programs is necessary to improve financial literacy scores.

Financial education can prove its effectiveness to the extent that it relates to the needs and learning possibilities of learners both in terms of content and teaching-learning-assessment methods.

Studies assessing the effects of financial education on the actual financial behavior of children and adolescents are rare and show almost no effect (Amagir et al., 2018). An appropriate method of teaching financial education to children and adolescents in primary and secondary school is "experiential learning". In college, emphasis should be placed on students' specific "life events".

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THE INFLUENCE OF NON-EUROPEAN WORKERS ON THE NATIONAL LABOR MARKET

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Abstract: *The growing labour shortage in our country is prompting more and more companies to turn to importing employees from outside the European Union to develop their businesses. In this context, the issue of non-EU workers in Romania represents a complex subject of undeniable relevance and extreme importance for Romanian society. In this research, I aim to carry out an in-depth analysis, both theoretical and practical, of the current internal regulations concerning the conditions that employers must meet when hiring non-EU workers.*

Key words: *non-EU worker, unemployment, Employment policy, work permit.*

JEL Classification JEL: *K31, J08, J61.*

1. Introduction

The growing labor shortage faced by companies in Romania, primarily driven by the migration of Romanian workers to countries with greater economic stability, negative demographic trends, and the demands in increasing workforce due to the rapid economic growth experienced by our country, has made it imperative to open the labor market to workers from non-EU countries.

In this context, legal migration is seen as a way to address the domestic labor shortage, fill gaps in specific skills, and support economic growth. The government plays a crucial role in facilitating this process in line with its labor migration policy by annually setting a quota for workers from outside the European Union, based on the current labor market needs.

2. Literature review

The migration phenomenon has captured the attention of experts, who have analyzed both the causes driving the process and its effects on host countries. Regarding the causes of migration, a review of the literature highlights several factors: the increasing demand for workers in host countries combined with a surplus of human resources in countries of origin, local populations' reluctance to accept jobs that confer low social status or offer inadequate remuneration (Gorodzeisky & Semyonov, 2017), dramatic events occurring in the countries of origin, and favorable legal frameworks (Olof, Anders, & Liljeberg Linus, 2017). Dorn and Zweimüller (2021) suggest that immigration levels are positively correlated with income levels in host countries. Additionally, Guzi et al. (2023) demonstrate that migration has positive economic and social effects, reflected in the host country's revenue, trade, direct foreign investment, and innovation.

The study by Guzi et al. (2023) demonstrates that the amount of immigrants in the labor market, their entry into the host market, their composition, and legal status are influenced by immigration policies, which vary significantly across EU countries. Heidenreich's (2023) study is also noteworthy, as it examines labor market opportunities for both European and non-European immigrants. The author highlights that labor market integration for immigrants is a multifaceted challenge. Key risks faced by the immigrant population include unemployment, job insecurity, overqualification, or low wages. The study, based on data

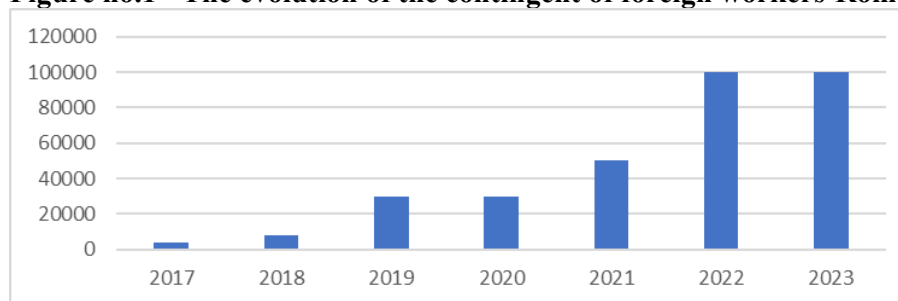
from 30 countries between 2007 and 2018, shows higher unemployment rates among non-European immigrants compared to European migrants, as well as wage disparities between migrants and natives. It is important to note that immigrants encounter several challenges when integrating into the local labor market, such as limited knowledge of the local language and culture, restricted access to information and social networks, and fewer opportunities for professional credential recognition, particularly for non-European immigrants (Gorodzeisky & Semyonov, 2017).

Considering both gender and birthplace, immigrant women often hold the most disadvantaged position in European labor markets (Schieckoff & Sprengholz, 2021). Building on these realities, the research by Platt, Polavieja, and Radl (2021) examines the impact of national legislation on immigration in Europe. The authors demonstrate the heterogeneity of integration policies from the perspective of immigrants through an analysis covering the period from 2002 to 2012. Their research focuses on anti-discrimination legislation, recognition of qualifications, immigrants' labor market rights, employment support, and access to social security benefits. The study, based on data from 6,176 immigrants aged 16 to 64 across 23 European countries, shows a negative relationship between labor market rigidity and immigrants' occupational scores, as well as a strong positive correlation between anti-discrimination policies and immigrants' occupational outcomes.

Building on these findings, this article aims to analyze the key indicators characterizing Romania's labor market and present the national policies regarding the employment of immigrants.

The article will start from pointing out the fact that between 2017 and 2023, the quota for foreign workers in Romania increased from 4,000 in 2017 to 100,000 in 2023 (Figure 1). According to data provided by the General Inspectorate for Immigration, 108,884 work permits were issued in 2022, and 101,240 permits were issued in 2023 (Ministry of Internal Affairs, IGI, 2023).

Figure no.1 - The evolution of the contingent of foreign workers-Romania



Source: compiled by the author based on government decisions from 2017 to 2023 establishing the foreign worker quota.

According to data from the same institution, the number of foreign nationals with residence permits for employment, secondment, or dependent activities in Romania was 72,337 as of September 30, 2023.

In line with the increase in the foreign worker quota, the number of active full-time employment contracts registered by Romanian employers for employees from non-EU countries has also risen. In 2021, Romanian employers registered 54,292 new employment contracts for non-EU employees, in 2022 the number was 96,053, and from January 1, 2023, to October 10, 2023, an additional 81,927 new contracts were signed. According to data provided by the Labor Inspectorate, the number of active full-time employment contracts for

non-EU employees that were signed and terminated between January 1, 2023, and October 10, 2023, was 1,800. In 2022, the number of such contracts signed and terminated was 2,545, and in 2021, it was 2,233.

This has led to the need for increased flexibility in legislation, particularly in the regulations governing the employment of foreign nationals in Romania, both to accommodate a larger influx of workers and to streamline the applicable procedures.

3. A short presentation of the actual labour market markers in Romania

The immigration phenomenon, became for the first time in 2022, the main factor that contributed to the population increase. The balance of international migration was positive, with the immigrants outnumbering the emigrants by little over 85 thousand. During the year 2022, most emigrants were men(50,2%), while also constituting a majority among immigrants(53,3%).

According to data provided by INS(2023) on the 1st of January 2023, the active civilian population was 8051,2 thousand people, representing 42,3% of the total population of the country. The number of occupied population was 7812,1 thousand, with employees constituting 71,77%(5607,2 thousand). The division of employees on economical branches was as follows: 64,4% in the services branch(3611 thousand), 33,23% in the industry and construction branch(1863,3%) and 2,37% in agriculture, forestry and pisciculture.

At the end of 2022, 89% of the occupied population was working in non-agricultural branches, respectively: social and comercial services-55,7% and industry and constructions-33,3%.

Data provided by INS shows a percentage of employment of 62,3% in 2022. The gender structure is as follows: 66,8% men and 55,7% women.

Another important indicator for the labour market is the number of unemployed people registred at the work force occupancy agencies. In 2022, this number increased by 1,8% compared to 2021, respectively 464,4 thousand people. The gender layout shows males represent more than half of the unemployed persons(53,2%). 2023 comes with an improvement in the labour market, unemployment numbers decreasing by 8,8 thousand.

Salaried peoples' numbers decreased by 60,1 thousand in 2023 compared to 2022, accounting for 85,7% in the employed population. The structure of employed population on economical sectors was: 54,9% in services, 33,2% in industry and constructions and only 11,9% in agriculture.

In 2023, self-employed people and unpaid family workers represented 13,0% of the employed population. As an indicator, in 2023, the unemployment rate was 5,6%. The difference between genders remains constant, with an unemployment rate of 5,9% in men and 5,1% in women. Regarding the structure on residencial areaa, INS data shows a 8,8% in the rural area compared to only 3,0% in the urban area. The unemployment rate in young people was 21,8%.

According to INS data(2024) regarding the demand in work force in 2023, the average number of vacant jobs was 39.934, decreasing by 5.2 thousand from the previous year. The average yearly rate of vacant jobs, respectively: the ratio between the average yearly rate of vacant jobs and the average yearly rate of total jobs was 0,78%, decreasing by 0,12% from the previous year.

By analysing the necessity of workers on economical sectors, the highest average yearly rates of vacant jobs were registred in financial and insurance brokerage(1,60%), public administration(1,45%) and electricity, heat, hot water and AC production and supply(1,39%). In numbers, most vacant jobs are in the industry(12.717 vacant spots), retail(4796 spots),

public administration and defense(3952 spots). The lowest annual average rates of vacant spots were in the mining industry(0,29%), constructions(0,33%) and hotels and restaurants(0,47%).

The highest number of vacant jobs was registred in major group 2(11,5 thousand vacant spots) and major group 9(5,7 thousand spots). This data also matches with the workforce demand, which was 0,98% for major group 2 and 0,84% for major group 9. The registred workforce demand for administrative workers was 0,85%.

4. Employment of Foreign Nationals in Romania: The Procedure for Obtaining a Work Permit

Employing foreign labor from outside the European Union involves a legal procedure that employers often find complex and time-consuming. The legal framework for this process includes: Emergency Ordinance No. 194/2002 on the regime of foreigners in Romania; Law No. 76/2002 on the unemployment insurance system and employment stimulation; Ordinance No. 25/2014 on the employment and secondment of foreigners in Romania, and on the amendment and completion of certain regulations concerning the regime of foreigners in Romania; The Labor Code.

Although the legislative framework for employing foreigners has been continuously improved to adapt national regulations to the dynamics of professional migration and to facilitate the integration of these workers into the Romanian labor market, the procedure for hiring foreigners remains far from straightforward.

According to a 2023 study by AFSRU, 83% of companies consider the bureaucratic and discouraging legislative framework to be the biggest obstacle in recruiting non-EU labor. National legislation (Emergency Ordinance No. 194/2002 on the regime of foreigners in Romania, republished) distinguishes between foreigners and stateless individuals. Specifically, Article 2, paragraphs (1) (a) and (b) of OUG 194/2002 defines a foreigner as a person who does not hold Romanian citizenship, while a stateless person is a foreigner who does not hold the citizenship of any country.

Depending on the type and nature of the activity that the foreign national or stateless person will undertake in Romania, as well as their professional qualifications and the annual quotas established by government decision, foreigners or stateless individuals may be employed in Romania under various categories. These include permanent workers, trainee workers, au pair workers, seasonal workers, cross-border workers, detached workers, highly skilled workers, or transferred employees within the same company, as well as personnel with specialized qualifications. The law provides specific conditions for obtaining work permits for each of these categories.

According to Article 36 of the Labor Code, "foreign nationals and stateless persons may be employed under an individual employment contract based on a work authorization or a residence permit for employment purposes issued in accordance with the law."

In principle, employing foreigners by Romanian employers, whether individuals or legal entities, requires adhering to a procedure that includes the following steps:

- a) Obtaining a work permit;
- b) Obtaining a long-stay visa;
- c) Obtaining residence rights;
- d) Issuing a residence permit for employment or for secondment purposes.

According to Article 2, paragraph 1, letter (c) of Government Ordinance No. 25/2014, a work permit is an official document issued by the General Inspectorate for Immigration, which grants any interested employer the right to hire a foreign citizen for a specific position.

Letter (a) of the same article defines an employer as “a legal entity or an individual with a social or professional address, or domicile in Romania, or a branch in Romania of a foreign legal entity headquartered abroad, that hires a foreign national under the conditions of Law No. 53/2003 - the Labor Code, republished, with subsequent amendments and completions.”

The law mandates that employers obtain a work permit in order to employ a foreign national, while also specifying exceptions to this requirement. These exceptions outline situations where a work or secondment permit is not necessary for a foreign national to be employed or seconded in Romania.

The work permit is issued by the General Inspectorate for Immigration upon the employer's request, provided that the employer meets certain general conditions outlined in Article 4 of Government Ordinance No. 25/2014, as well as specific conditions depending on the category of workers to be employed (permanent workers, trainees, seasonal workers, au pair, highly skilled workers, cross-border workers).

The long-stay visa allows foreign nationals to enter and remain in Romania for a period of up to 90 days, granting them the right to request an extension of their temporary stay and obtain a residence permit from the Ministry of Internal Affairs – General Inspectorate for Immigration. This visa is issued only with the prior approval of the Ministry of Internal Affairs through the General Inspectorate for Immigration.

The long-stay visa for employment purposes (symbol D/AM) may be issued to foreign nationals who are to be employed in Romania, certifying both their right to work in the country as permanent workers and the right of individuals who will carry out their activities as seasonal workers in Romania.

Another type of visa, the long-stay visa for secondment purposes (symbol D/DT), may be issued to qualified foreign nationals who are employees of a legal entity based abroad and who are being seconded by their employer to perform work activities in Romania, in accordance with the law.

Foreign nationals seeking to work or engage in professional activities for a limited period may be granted the right to temporary residence if they meet specific legal conditions. Once obtained, the temporary residence permit for employment purposes can be extended upon request for a period equal to the duration of the employment contract, but no more than two years. This extension is granted provided the individual holds a full-time employment contract registered in accordance with the law, and their salary meets at least the minimum gross wage or, in the case of highly skilled workers, the average gross wage.

There are exceptions to this rule for highly skilled workers, whose temporary residence permit for employment can be extended for the duration of their employment contract plus an additional three months, but no longer than three years. Seasonal workers, on the other hand, can have their temporary residence permit extended for the duration of their contract plus five days, with a maximum total stay of 180 days within any 365-day period.

If a foreign worker's employment ends before the expiration of their single permit or EU Blue Card, these documents remain valid either for the period during which the foreign national receives unemployment benefits, as provided by applicable law, or, if no benefits are received, for up to 90 days from the date the employment ends.

Regarding the formalities, residence permits are issued by the General Inspectorate for Immigration according to the category of workers they apply to (permanent workers, trainees,

seasonal workers, au pairs, highly skilled workers, cross-border workers), or in the form of an EU Blue Card. The EU Blue Card is issued to foreign nationals who have had their temporary residence permit extended as highly skilled workers or, in some cases, granted without the need for a visa.

5. Conclusion

The aim of this article was to evaluate the employment process of non-european immigrants in Romania starting from their impact on the macroeconomic indicators and also on the cultural aspects in the host country.

The paper showcases the procedure through which the work permit could be obtained according to romanian laws, even though, according to specialists, it is difficult and often times deters the romanian employer. Our aim is to keep researching by analysing the main domains where non-european immigrants operate and also by measuring the impact on national economy.

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